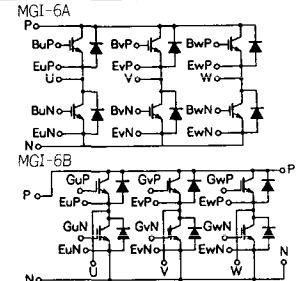
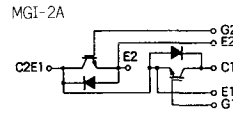
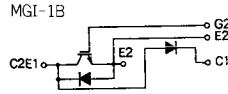
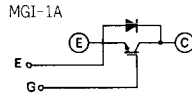


トランジスタ・モジュール (シリコンNチャネル IGBT)

- フリーホイール・ダイオード付
- 絶縁形

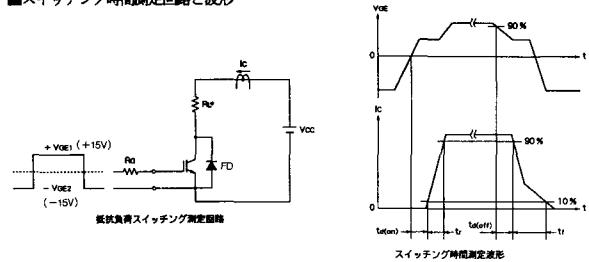
■等価回路



注1. $T_c = 25^\circ\text{C}$. 注2. AC, 1分間。

型名	最大定格 ($T_J = 25^\circ\text{C}$)										電気的特性 ($T_J = 25^\circ\text{C}$)											
	V_{CES}	V_{GSS}	I_C	I_{CP}	I_F	I_{FP}	P_C	T_J	T_{stg}	$V_{I_{EE}}$	I_{GSS}	V_{GE}	I_{CES}	V_{CES}	$V_{GE(OFF)}$	$V_{CE(SAT)}$	I_C					
	(V)	(V)	(注1) (A)	(注1) (A)	(注1) (A)	(注1) (A)	(注1) (W)	($^\circ\text{C}$)	($^\circ\text{C}$)	(注2) (V)	(nA) 最大	(V) 最大	(mA) 最大	(V) 最大	(V) 最小	(V) 最大	(mA) 最大					
CM50DY-12E	600	± 20	50	100	50	100	250	150	-40~125	2500	± 500	± 20	1.0	600		3.5	6.5	10	5.0	3.5	15	50
CM75DY-12E	600	± 20	75	150	75	150	310	150	-40~125	2500	± 500	± 20	1.0	600		3.5	6.5	10	7.5	3.5	15	75
CM100DY-12E	600	± 20	100	200	100	200	400	150	-40~125	2500	± 500	± 20	1.0	600		3.5	6.5	10	10	3.5	15	100
CM150DY-12E	600	± 20	150	300	150	300	600	150	-40~125	2500	± 500	± 20	1.0	600		3.5	6.5	10	15	3.5	15	150
CM200DY-12E	600	± 20	200	400	200	400	780	150	-40~125	2500	± 500	± 20	1.0	600		3.5	6.5	10	20	3.5	15	200
CM300DY-12E	600	± 20	300	600	300	600	1100	150	-40~125	2500	± 500	± 20	1.0	600		3.5	6.5	10	30	3.5	15	300
CM400DY-12E	600	± 20	400	800	400	800	1500	150	-40~125	2500	± 500	± 20	1.0	600		3.5	6.5	10	40	3.5	15	400
CM50E3Y-12E	600	± 20	50	100	50	100	250	150	-40~125	2500	± 500	± 20	1.0	600		3.5	6.5	10	5.0	3.5	15	50
CM75E3Y-12E	600	± 20	75	150	75	150	310	150	-40~125	2500	± 500	± 20	1.0	600		3.5	6.5	10	7.5	3.5	15	75
CM100E3Y-12E	600	± 20	100	200	100	200	400	150	-40~125	2500	± 500	± 20	1.0	600		3.5	6.5	10	10	3.5	15	100
CM150E3Y-12E	600	± 20	150	300	150	300	600	150	-40~125	2500	± 500	± 20	1.0	600		3.5	6.5	10	15	3.5	15	150
CM200E3Y-12E	600	± 20	200	400	200	400	780	150	-40~125	2500	± 500	± 20	1.0	600		3.5	6.5	10	20	3.5	15	200
CM300E3Y-12E	600	± 20	300	600	300	600	1100	150	-40~125	2500	± 500	± 20	1.0	600		3.5	6.5	10	30	3.5	15	300
CM300HA-12E	600	± 20	300	600	300	600	1100	150	-40~125	2500	± 500	± 20	1.0	600		3.5	6.5	10	30	3.5	15	300
CM400HA-12E	600	± 20	400	800	400	800	1500	150	-40~125	2500	± 500	± 20	1.0	600		3.5	6.5	10	40	3.5	15	400
CM50TF-12E	600	± 20	50	100	50	100	250	150	-40~125	2500	± 500	± 20	1.0	600		3.5	6.5	10	5.0	3.5	15	50
CM75TF-12E	600	± 20	75	150	75	150	310	150	-40~125	2500	± 500	± 20	1.0	600		3.5	6.5	10	7.5	3.5	15	75
CM100TF-12E	600	± 20	100	200	100	200	400	150	-40~125	2500	± 500	± 20	1.0	600		3.5	6.5	10	10	3.5	15	100

■スイッチング時間測定回路と波形



注3. スwitching時間は抵抗負荷時の値。

注4. FD: フリーホイール・ダイオード。

C _{oss} (pF)	f (kHz)	スイッチング時間 (ns)						エミッタ・コレクタ間ダイオード			熱抵抗		等価回路	外形図	記事	型名				
		V _{CE} (V)	V _{GE} (V)	t _r 最大	t _d (ON) 最大	t _f 最大	t _d (OFF) 最大	R _G (Ω)	I _C (A)	V _{CC} (V)	V _F (V)	I _F (A)					t _{rr} (ns)	R _{th(j-c)} (°C/W)		
																		最大	最大	最大
10000	10	0	300	150	350	400	13	50	300	2.5	50	200	50	-100	0.5	1.0	MG1-2A	M-4A2D	F D付, 直列接続	CM50DY-12E
15000	10	0	300	150	350	400	8.3	75	300	2.5	75	200	75	-150	0.4	0.9	MG1-2A	M-4A2D	F D付, 直列接続	CM75DY-12E
20000	10	0	300	150	350	400	6.3	100	300	2.5	100	200	100	-200	0.31	0.7	MG1-2A	M-4A2D	F D付, 直列接続	CM100DY-12E
30000	10	0	700	400	350	600	4.2	150	300	2.5	150	200	150	-300	0.21	0.47	MG1-2A	M-4C2A	F D付, 直列接続	CM150DY-12E
40000	10	0	700	400	350	700	3.1	200	300	2.5	200	200	200	-400	0.16	0.35	MG1-2A	M-4C2A	F D付, 直列接続	CM200DY-12E
60000	10	0	700	400	350	800	2.1	300	300	2.5	300	200	300	-600	0.11	0.24	MG1-2A	M-9D2A	F D付, 直列接続	CM300DY-12E
80000	10	0	700	400	350	800	1.6	400	300	2.5	400	200	400	-800	0.085	0.18	MG1-2A	M-10A2C	F D付, 直列接続	CM400DY-12E
10000	10	0	300	150	350	400	13	50	300	2.5	50	200	50	-100	0.5	1.0	MG1-1B	M-4A2E	F D付	CM50E3Y-12E
15000	10	0	300	150	350	400	8.3	75	300	2.5	75	200	75	-150	0.4	0.9	MG1-1B	M-4A2E	F D付	CM75E3Y-12E
20000	10	0	300	150	350	400	6.3	100	300	2.5	100	200	100	-200	0.31	0.7	MG1-1B	M-4A2E	F D付	CM100E3Y-12E
30000	10	0	700	400	350	600	4.2	150	300	2.5	150	200	150	-300	0.21	0.47	MG1-1B	M-4C2B	F D付	CM150E3Y-12E
40000	10	0	700	400	350	700	3.1	200	300	2.5	200	200	200	-400	0.16	0.35	MG1-1B	M-4C2B	F D付	CM200E3Y-12E
60000	10	0	700	400	350	800	2.1	300	300	2.5	300	200	300	-600	0.11	0.24	MG1-1B	M-9D2B	F D付	CM300E3Y-12E
60000	10	0	700	400	350	800	2.1	300	300	2.5	300	200	300	-600	0.11	0.24	MG1-1A	M-9B1C	F D付	CM300HA-12E
80000	10	0	700	400	350	800	1.6	400	300	2.5	400	200	400	-800	0.085	0.18	MG1-1A	M-9B1C	F D付	CM400HA-12E
10000	10	0	300	150	350	400	13	50	300	2.5	50	200	50	-100	0.5	1.0	MG1-6A	M-2B6C	F D付, 3相ブリッジ接続	CM50TF-12E
15000	10	0	300	150	350	400	8.3	75	300	2.5	75	200	75	-150	0.4	0.9	MG1-6B	M-12B6A	F D付, 3相ブリッジ接続	CM75TF-12E
20000	10	0	300	150	350	400	6.3	100	300	2.5	100	200	100	-200	0.31	0.7	MG1-6B	M-12B6A	F D付, 3相ブリッジ接続	CM100TF-12E

FD-1



FD-2



FD-3



FD-4



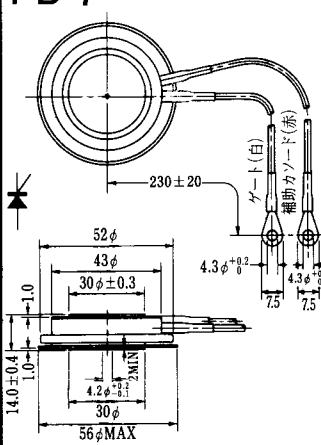
FD-5



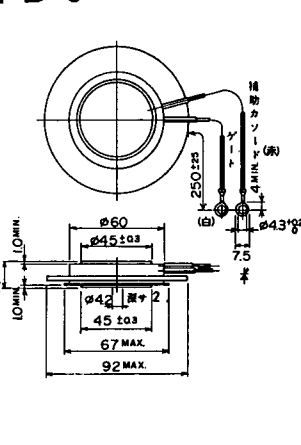
FD-6



FD-7



FD-8



FD-9



FD-10



FD-11

FD-12





《寸法図単位：mm》

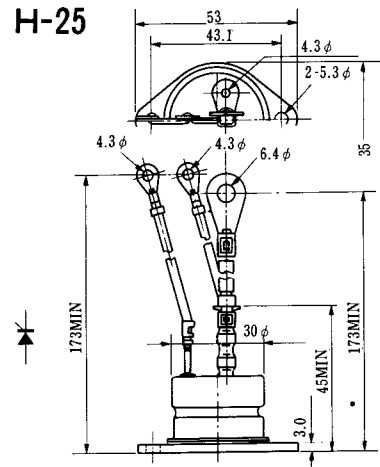
H-23



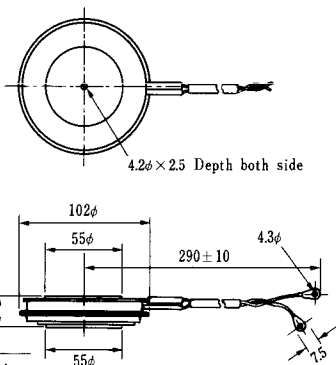
H-24



H-25

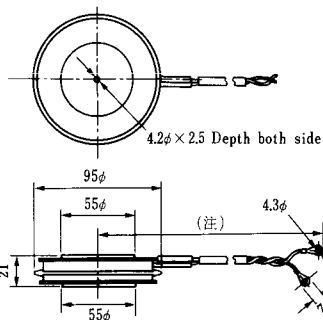


H-26



Type	Direction of polarity
CA12	

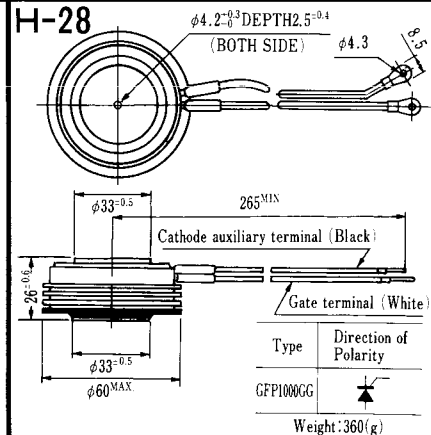
H-27



Type	Direction of polarity
CF11V	

(注) CC11V: 400 ± 10
CF11V: 250 ± 10

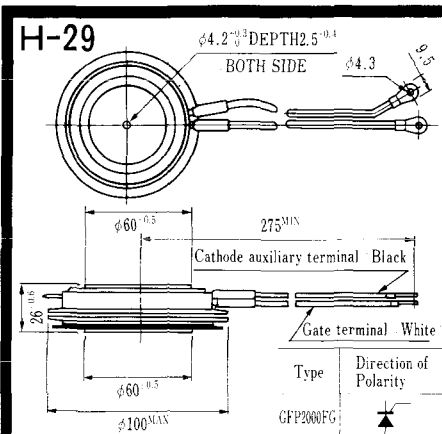
H-28



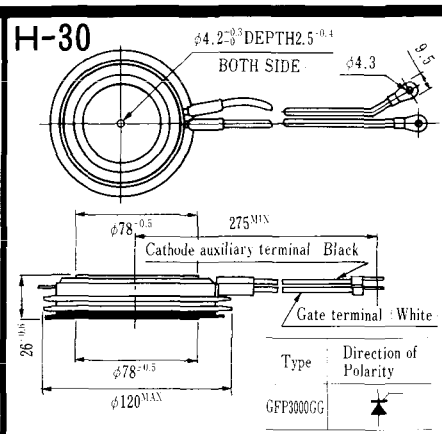
Type	Direction of Polarity
GFP100GG	

Weight: 360(g)

Note: The thickness is a dimension in press at the rated mounting force.

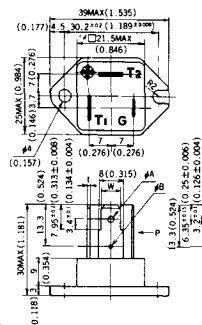


Note: The thickness is a dimension in press at the rated mounting force. Weight: 870(g)



Note: The thickness is a dimension in press at the rated mounting force. Weight: 1,460(g)

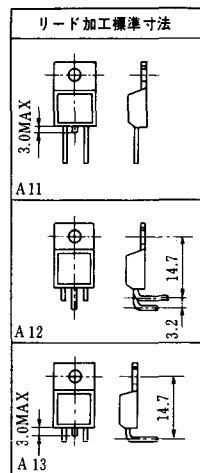
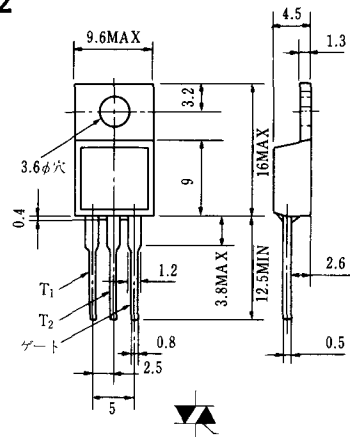
HT-1



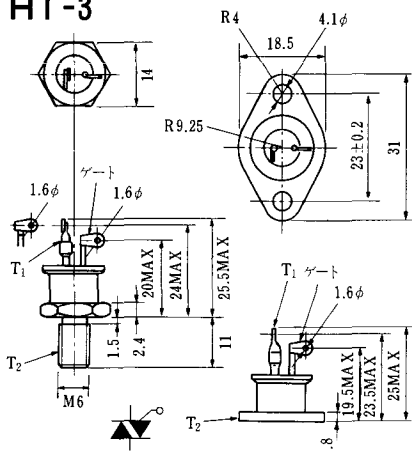
TERMINAL	t	W	φA	φB
T ₁	0.8±0.025 (0.031±0.001)	6.35±0.1 (0.250±0.004)	2.00 ^{+0.1} ₀ (0.079±0.004)	1.3 (0.051)
T ₂	0.8±0.025 (0.031±0.001)	6.35±0.1 (0.250±0.004)	2.00 ^{+0.1} ₀ (0.079±0.004)	1.3 (0.051)
G	0.5±0.025 (0.020±0.001)	4.75±0.1 (0.187±0.004)	1.55 ^{+0.1} ₀ (0.061±0.004)	1.3 (0.051)

Unit in mm (inch)

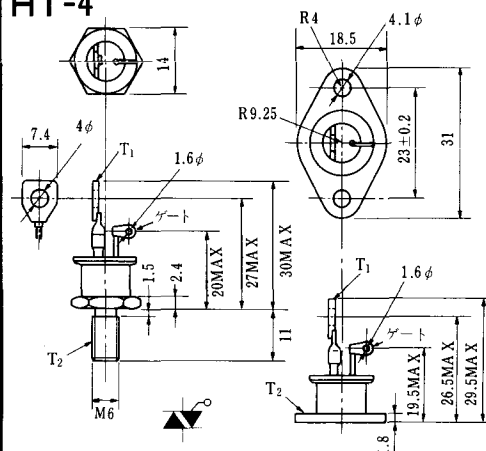
HT-2



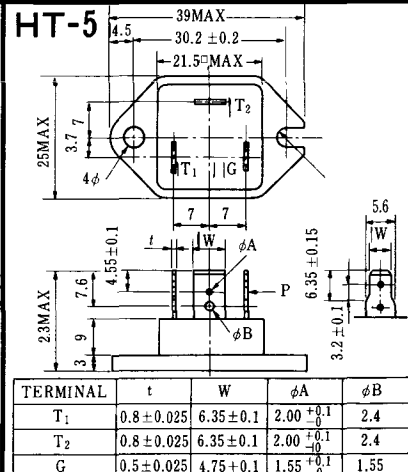
HT-3



HT-4



HT-5



M-1



M-2



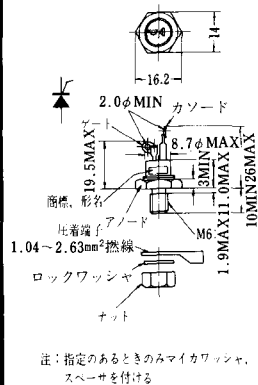
M-3



M-4



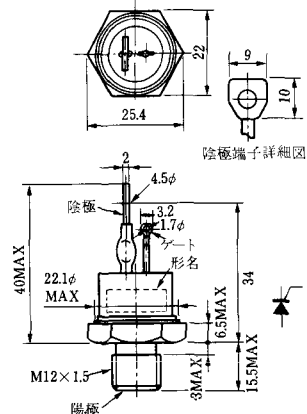
M-5



M-6



M-7



M-8



M-9



M-10



M-11



M-12



M-13



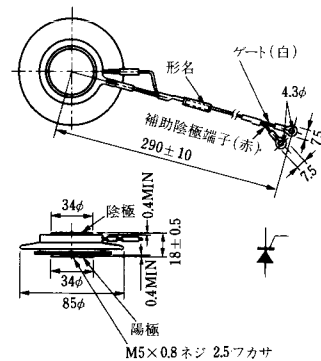
M-14



M-15



M-16





M-25



M-26



M-27



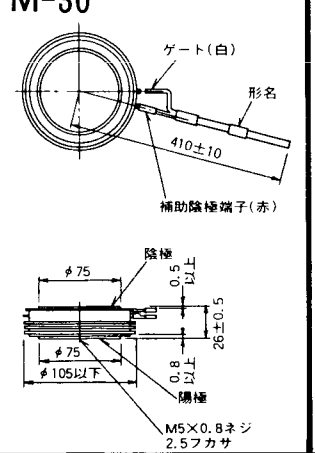
M-28



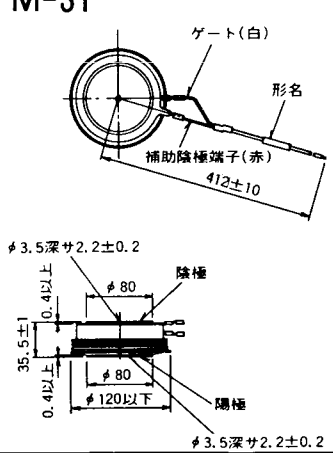
M-29



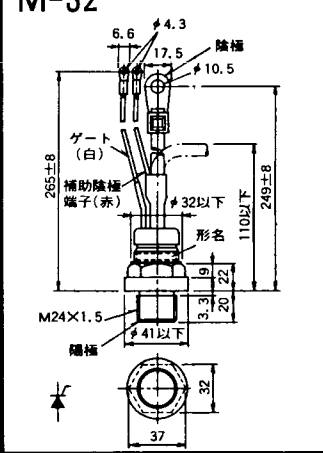
M-30



M-31



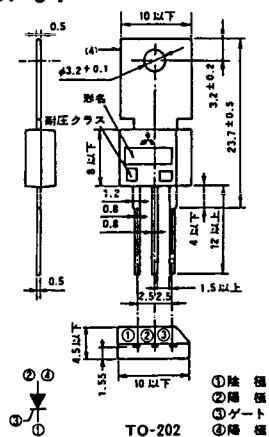
M-32



M-33



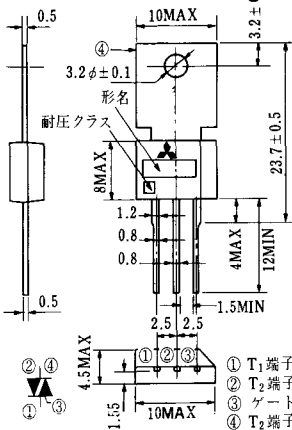
M-34



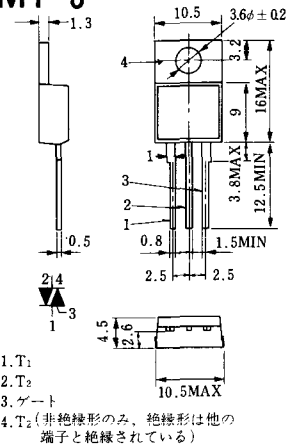
MT-1



MT-2



MT-3



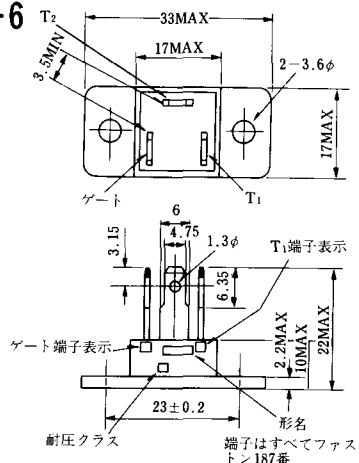
MT-4



MT-5



MT-6



MT-7



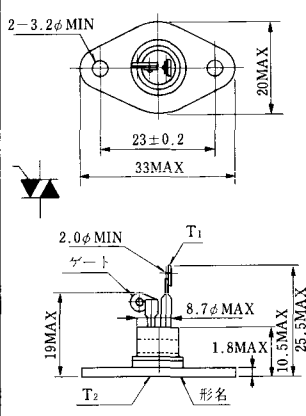
MT-8



MT-9



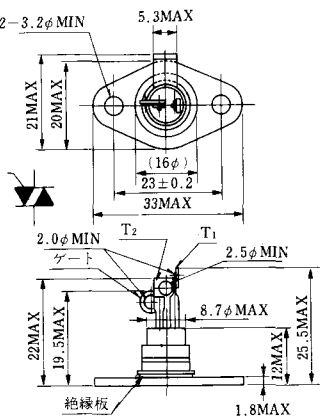
MT-10



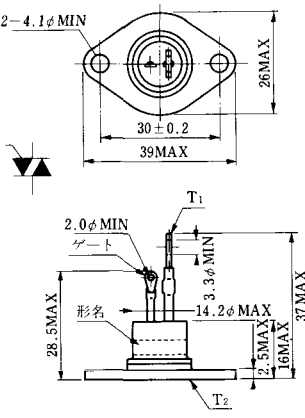
MT-11



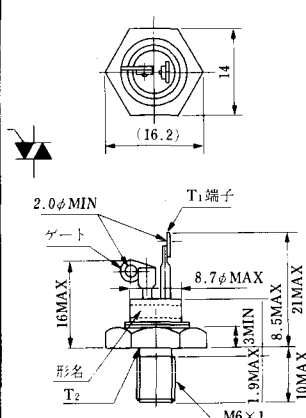
MT-12



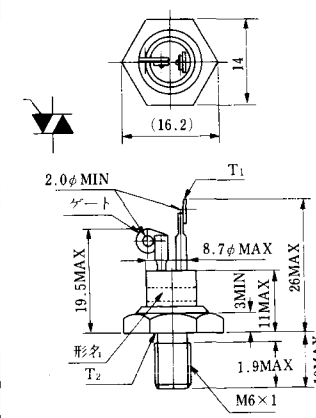
MT-13



MT-14



MT-15



MT-16

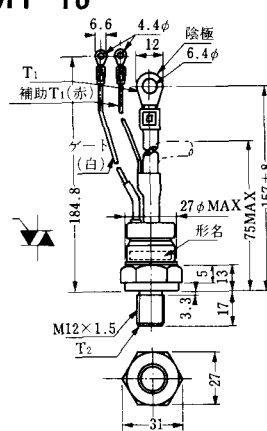


MT-17

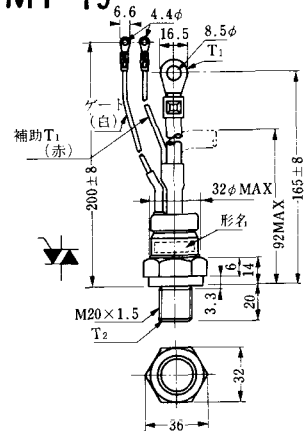


端子詳細図

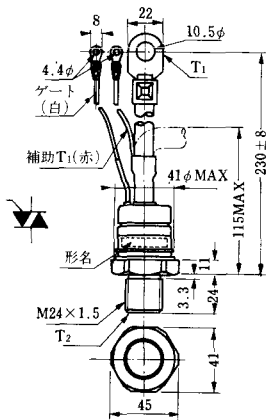
MT-18



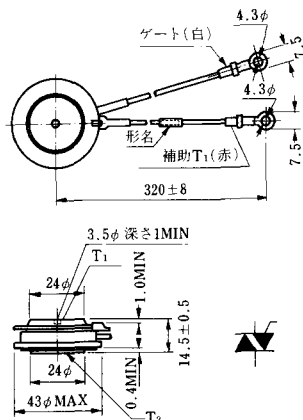
MT-19



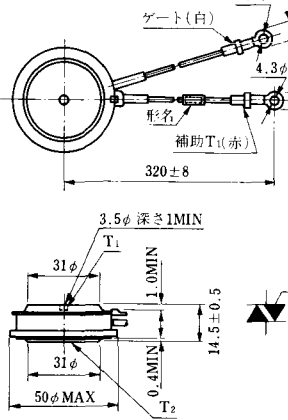
MT-20



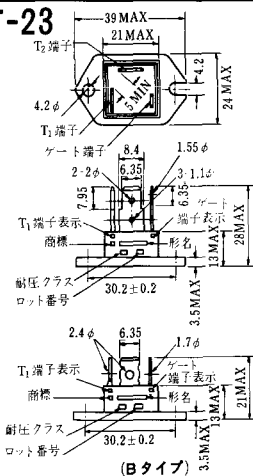
MT-21

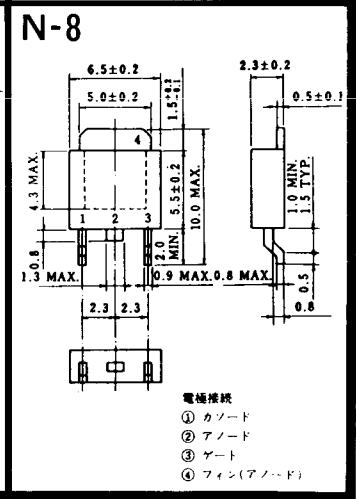
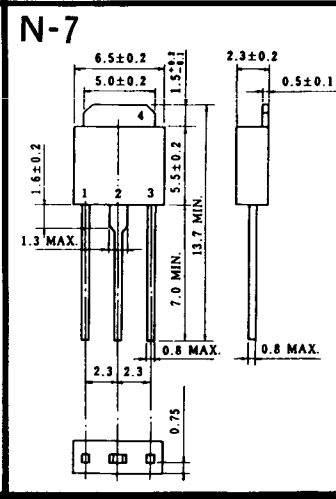
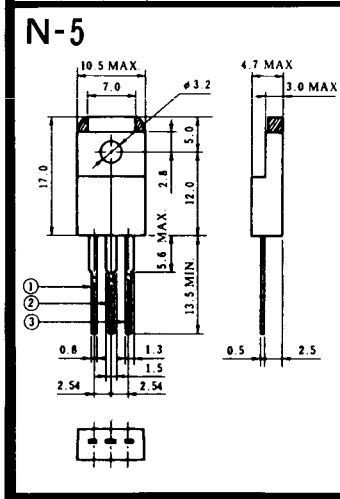
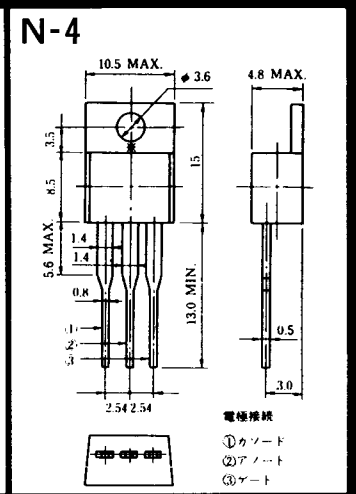
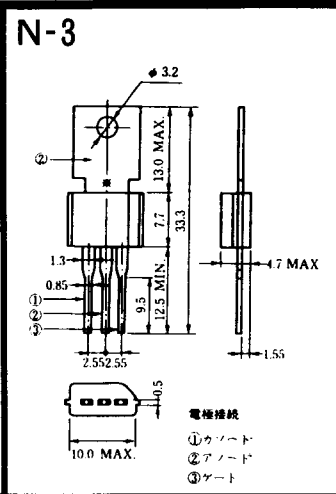
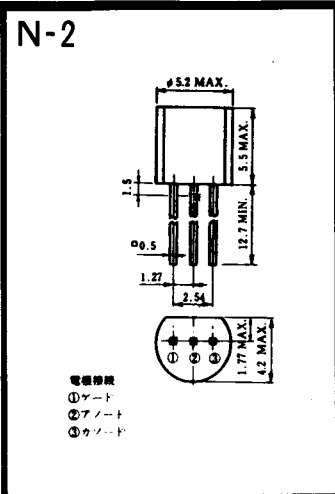
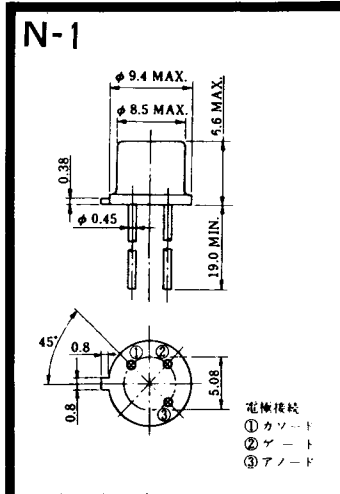


MT-22



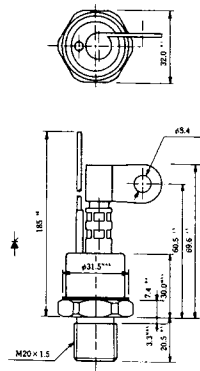
MT-23





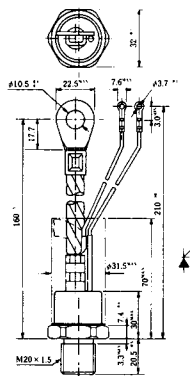
NI-9

259RW
309RW



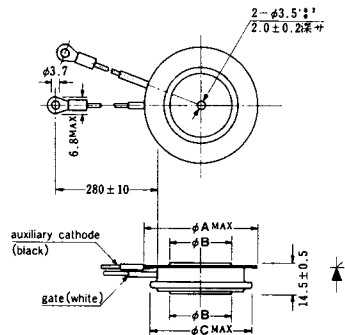
NI-10

259RW_{JL}
309RW_{JL}



NI-11

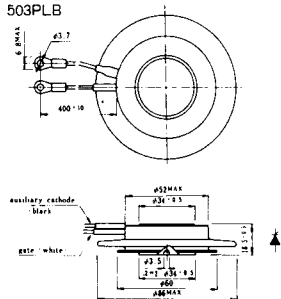
103PA
253PA
503PA
553PA
803PA
103PLE
103PLG
103PLH
203PLG
253PLE
253PLH
353PLG
403PLE
403PLH



型名	103PA, 103PLE, 103PLG, 103PLH	253PA, 203PLG, 253PLE, 253PLH	503PA, 553PA, 353PLG, 403PLE, 403PLH	803PA
寸法 A	40	46	55.5	55.5
寸法 B	16	22	30	32
寸法 C	36	42	50.5	50.5

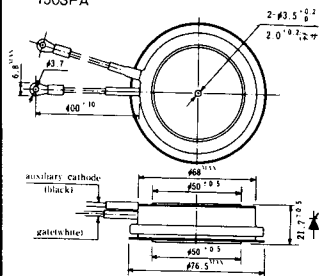
NI-12

403PAB
503PAB
503PLB



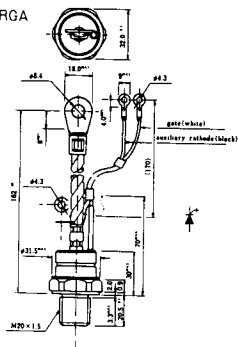
NI-13

1003PA
1003PAB
1003PLF
1003PLH
1503PA



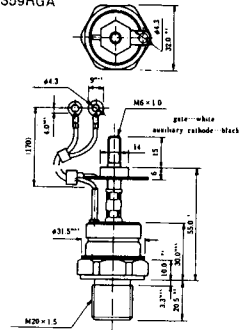
NI-14

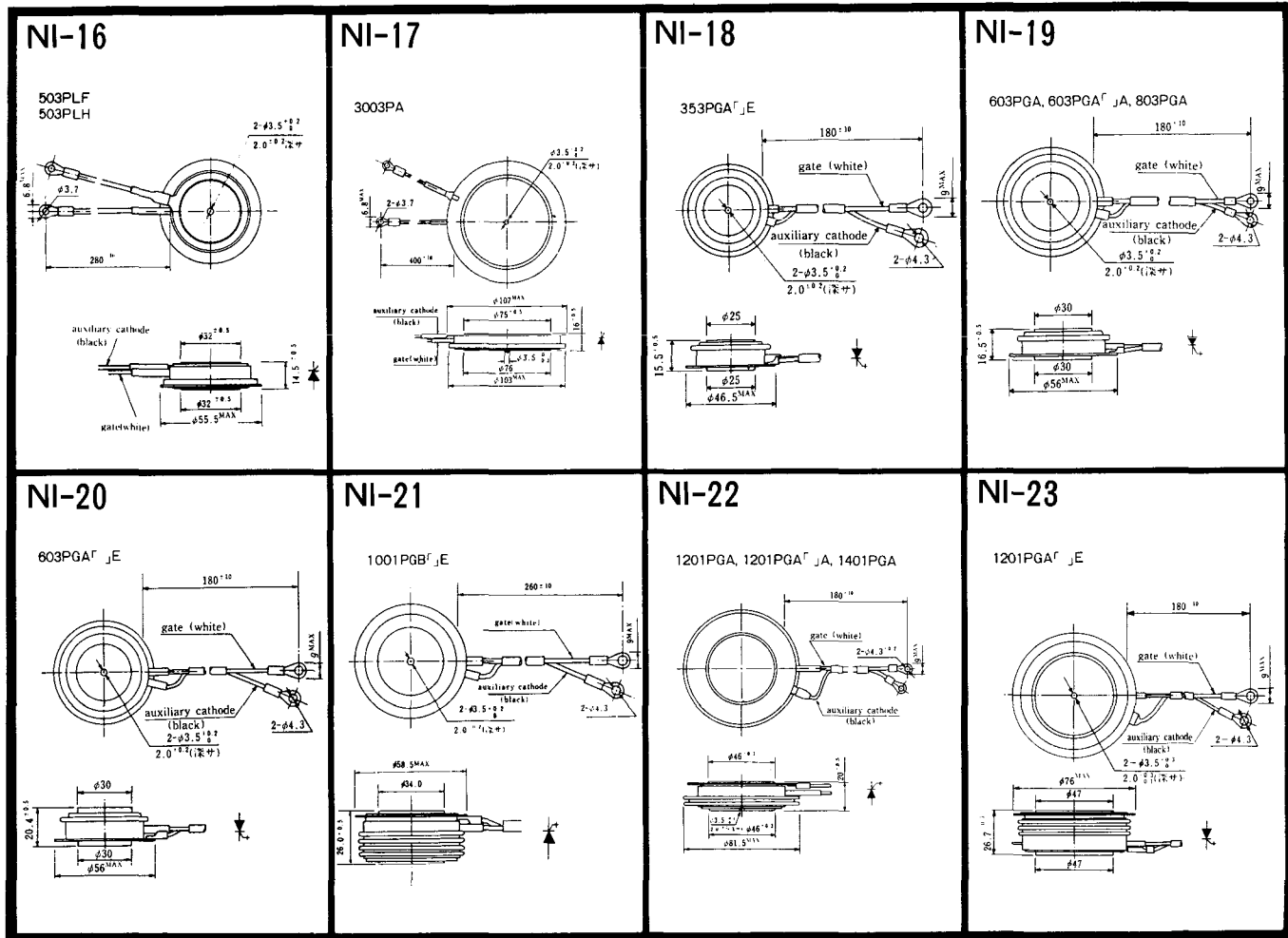
358RGA



NI-15

359RGA





NI-24

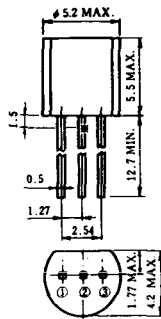
2001PGB^r JE



NI-25

NI-26

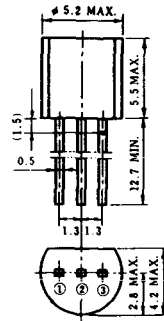
NT-1



電極接続

- ① T₁
- ② ゲート
- ③ T₂

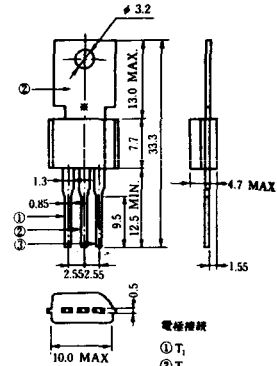
NT-2



電極接続

- ① T₁
- ② ゲート
- ③ T₂

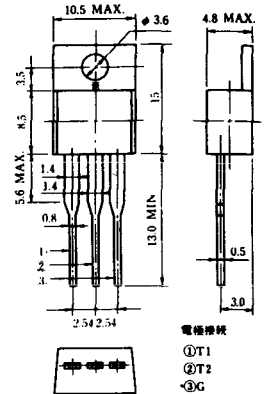
NT-3



電極接続

- ① T₁
- ② T₂
- ③ ゲート

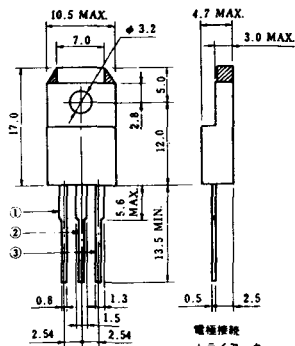
NT-4



電極接続

- ① T₁
- ② T₂
- ③ G

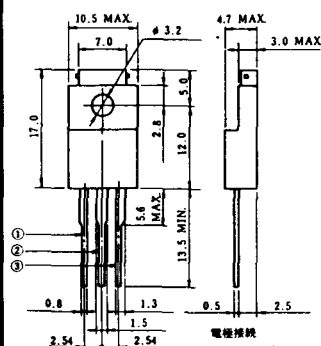
NT-5



電極接続
トライアック

- ① T₁
- ② T₂
- ③ ゲート

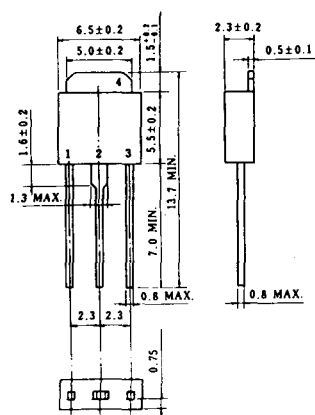
NT-6



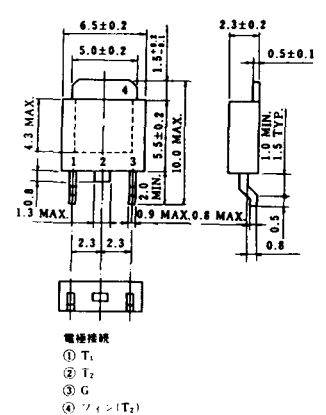
電極接続
トライアック

- ① T₁
- ② T₂
- ③ ゲート

NT-7



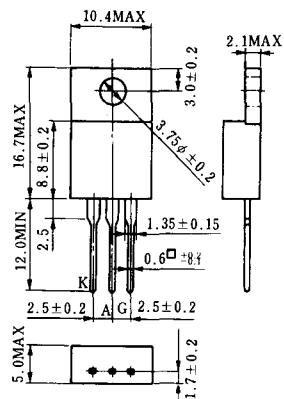
NT-8



電極接続

- ① T₁
- ② T₂
- ③ G
- ④ シフト(T₂)

S-1



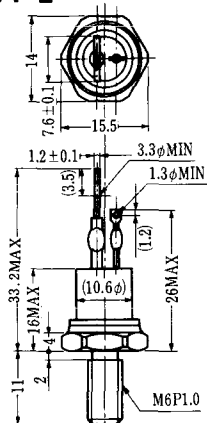
ST-1



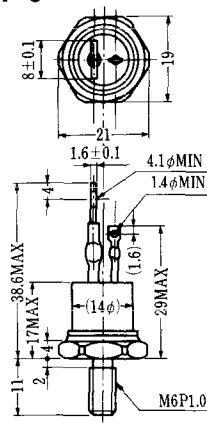
SA-1



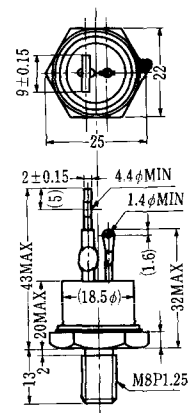
SA-2



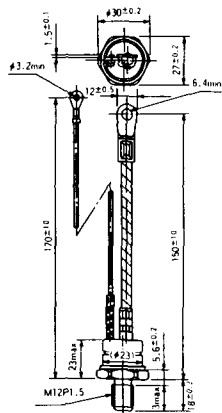
SA-3



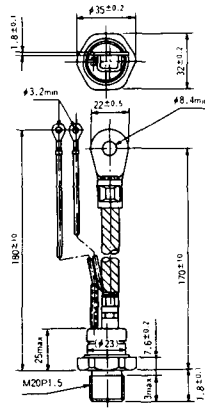
SA-4



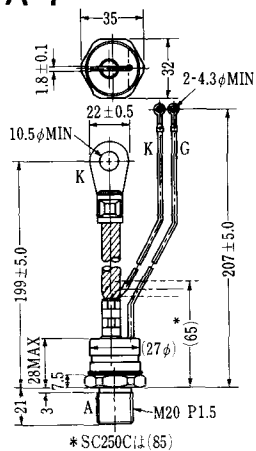
SA-5



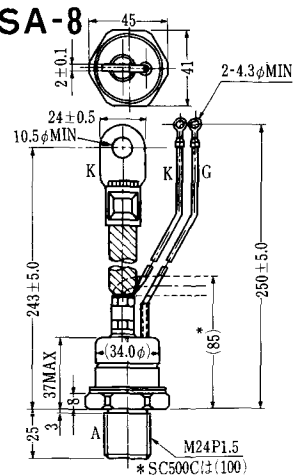
SA-6



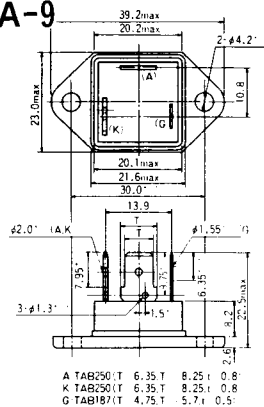
SA-7



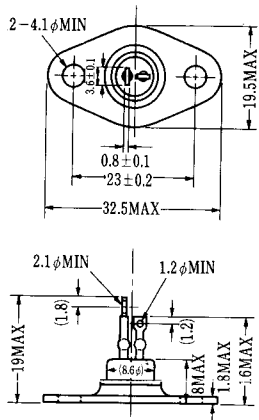
SA-8



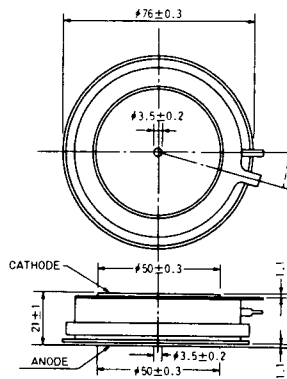
SA-9



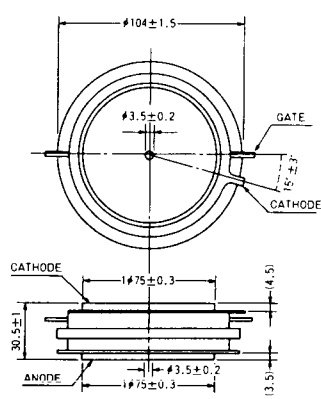
SA-10



SA-11



SA-12



SAT-10



SAT-11



SY-1 (1096A)



C: Cathode
A: Anode
G: Gate

SY-2 (1151)



G: Gate
A: Anode
C: Cathode

SY-3 (1104)



G: Gate
A: Anode
C: Cathode

SY-4 (1150)



G: Gate
A: Anode
C: Cathode

1097A



G: Gate

1102



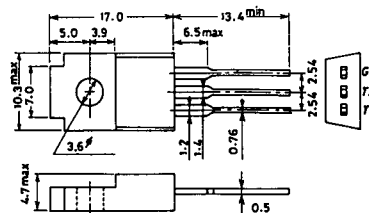
1141



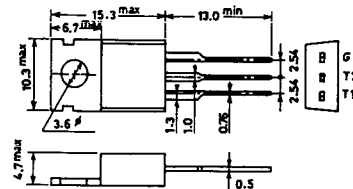
1142



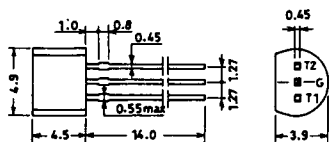
1144



1155

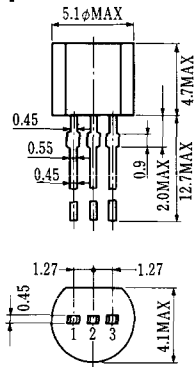


1192A



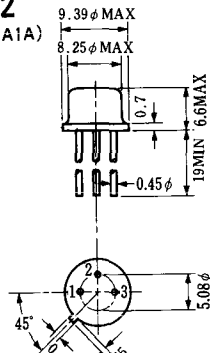
G: Gate

T-1 (13-5A1A)



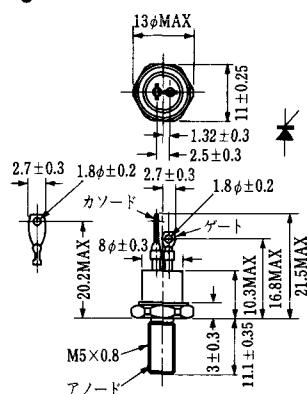
- 1 ゲート
- 2 アノード
- 3 カソード

T-2 (13-8A1A)



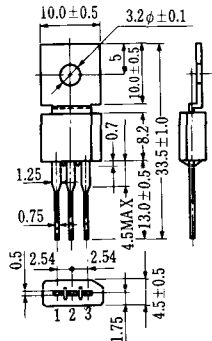
1. カソード
2. ゲート
3. アノード(ケース)

T-3 (13-8C1A)

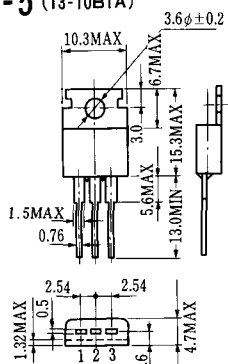


- 1 カソード
- 2 アノード
- 3 ゲート

T-4 (13-10A1A)

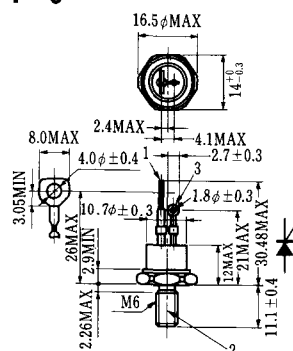


T-5 (13-10B1A)



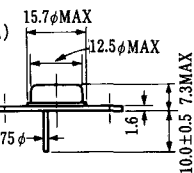
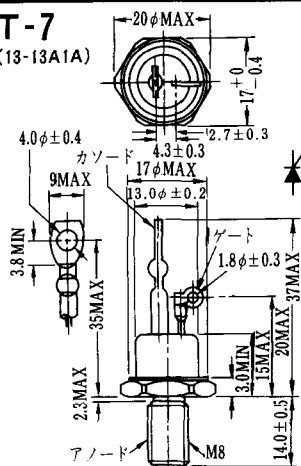
- 1 カソード
- 2 アノード
- 3 ゲート

T-6 (13-11D1A)

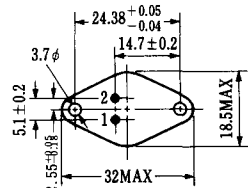


- 1 カソード
- 2 アノード
- 3 ゲート

T-7 (13-13A1A)

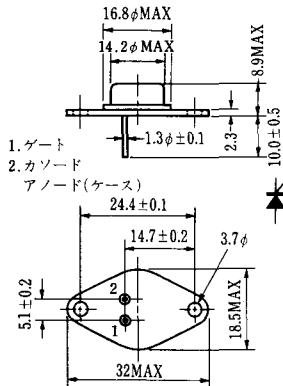


T-8 (13-13B1A)



1. ゲート
2. カソード
3. アノード(ケース)

T-9 (13-14A1A)



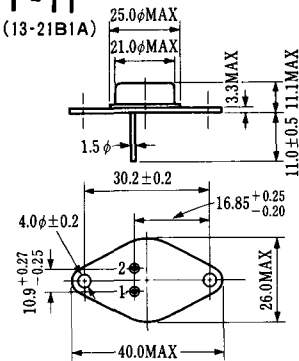
1. ゲート
2. カソード
- アノード(ケース)

T-10 (13-19A1A)



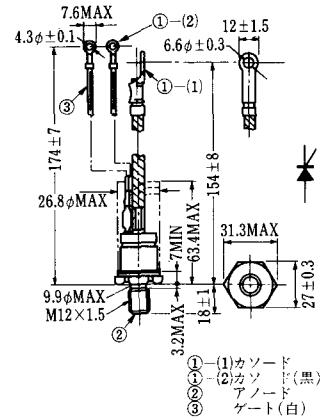
1. カソード
2. アノード
3. ゲート

T-11 (13-21B1A)



1. ゲート
2. カソード
- アノード(ケース)

T-12 (13-27B1B)



- ① (1) カソード
- ① (2) カソード(黒)
- ② アノード
- ③ ゲート(白)

T-13 (13-27C1A)



- 1-(1) カソード
- 1-(2) カソード(黒)
- 2 アノード
- 3 ゲート(白)

T-14 (13-32A1A)



- 1-(1) カソード
- 1-(2) カソード(黒)
- 2 アノード
- 3 ゲート(白)

T-15 (13-35C1B)



- ① (1) カソード
- ① (2) カソード(黒)
- ② アノード
- ③ ゲート(白)

T-16 (13-40B1A)



- ① (1) カソード
- ① (2) カソード(黒)
- ② アノード
- ③ ゲート(白)

T-17 (13-42A1A)



T-18 (13-45D1A)



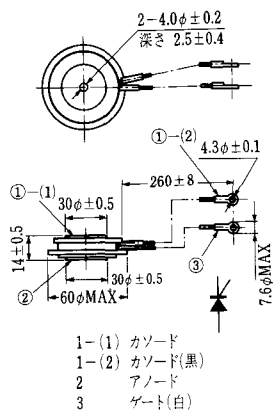
T-19 (13-52B1A)



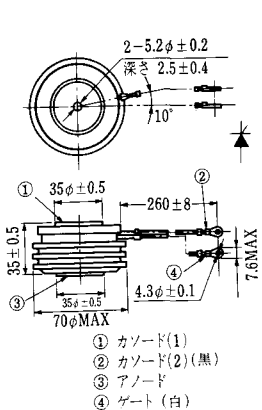
T-20 (13-52C1A)



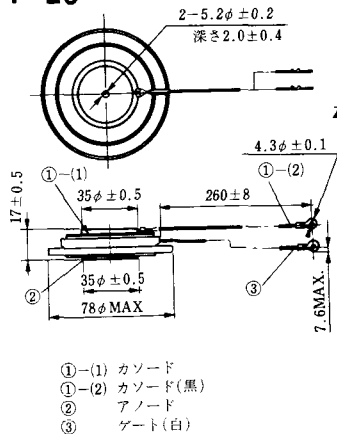
T-21 (13-60A1A)



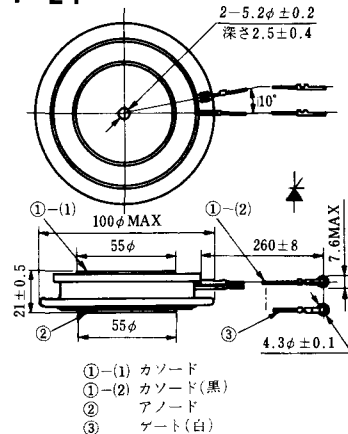
T-22 (13-70C1A)



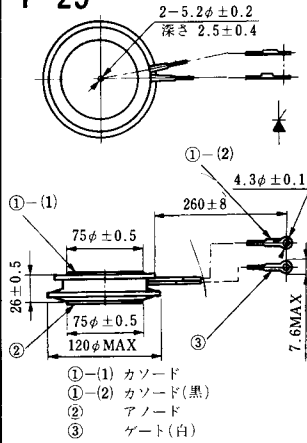
T-23 (13-78A1A)



T-24 (13-100C1A)



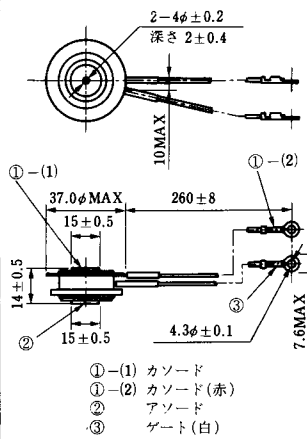
T-25 (13-120A2A)



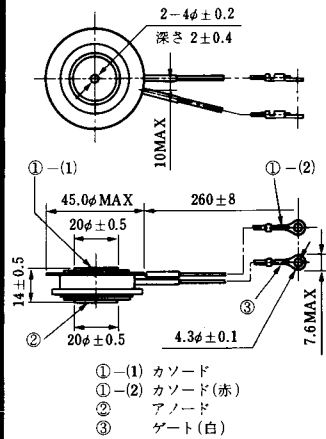
T-26 (13-150A1A)



T-27 (13-37A1A)



T-28 (13-45E1A)



T-29 (13-51A1A)



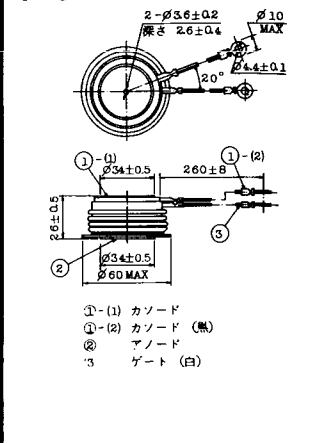
T-30 (13-57A1A)



T-31 (13-100E1A)



T-32 (13-60E3A)



T-33 (13-78B1A)



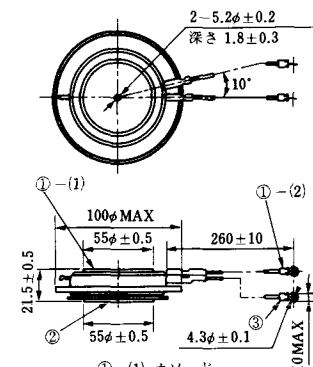
- ① カソード
- ② アノード
- ③ ゲート

T-34 (13-66A1A)



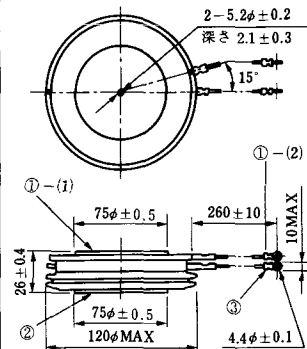
- ① カソード
- ② アノード
- ③ ゲート

T-35 (13-100D1A)



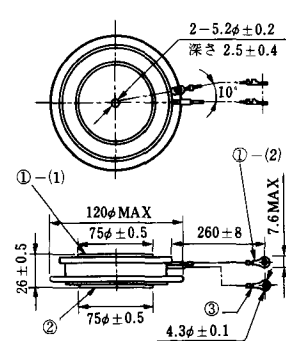
- ①-(1) カソード
- ①-(2) カソード(黒)
- ② アノード
- ③ ゲート(白)

T-36 (13-120E1A)



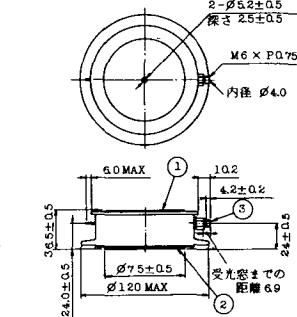
- ①-(1) カソード
- ①-(2) カソード(黒)
- ② アノード
- ③ ゲート(白)

T-37 (13-120A1A)



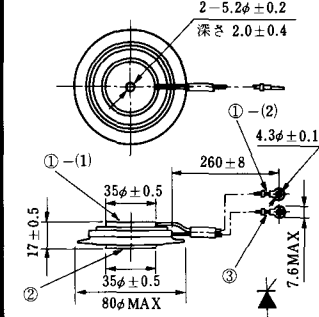
- ①-(1) カソード
- ①-(2) カソード(黒)
- ② アノード
- ③ ゲート(白)

T-38 (13-120C1A)



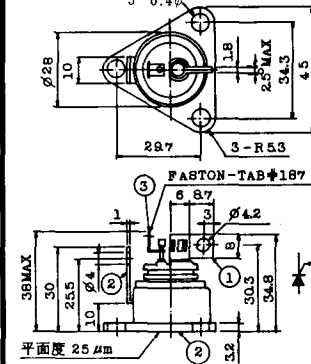
- ① カソード
- ② アノード
- ③ ゲート

T-39 (13-80B1A)



- ①-(1) カソード
- ①-(2) カソード(黒)
- ② アノード
- ③ ゲート(白)

T-40 (13-28A1A)



- 1. カソード
- 2. アノード
- 3. ゲート

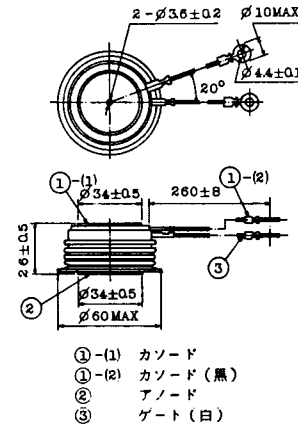
T-41 (13-28A2A)



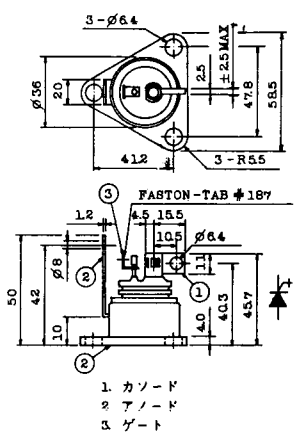
T-42 (13-45F1A)



T-43 (13-60E2A)



T-44 (13-36A1A)



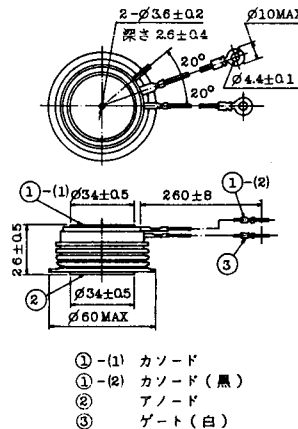
T-45 (13-51B1A)



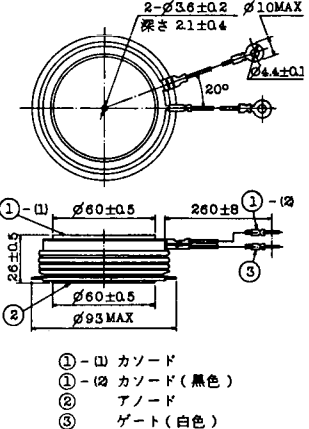
T-46 (13-36B1A)



T-47 (13-60E1A)



T-48 (13-93C1A)



T-57 (12-16C1A)



1. アノード (主)
2. ゲート (主)
3. カソード (共通)
4. ゲート (補助)
5. アノード (補助)

T-58 (13-10H1B)



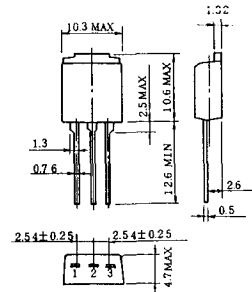
1. カソード
2. アノード
3. ゲート

T-59 (13-120A1A)



- 1-(1) カソード
- 1-(2) カソード (黒)
2. アノード
3. ゲート (白)

T-60



1. カソード
2. アノード
3. ゲート

T-61 (13-5B1A)



1. ゲート
2. アノード
3. カソード

T-62 (13-10H1A)



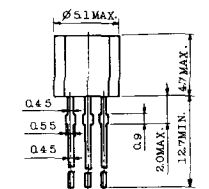
1. カソード
2. アノード
3. ゲート

T-63 (13-16A1B)



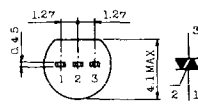
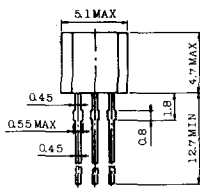
1. カソード
2. アノード
3. ゲート

TT-1



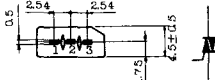
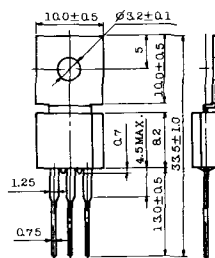
- 1 ゲート
- 2 T₂
- 3 T₁

TT-2



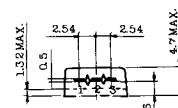
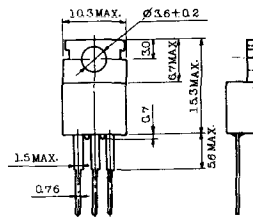
- 1 T₁
- 2 ゲート
- 3 T₂

TT-3



- 1 T₁
- 2 T₂
- 3 ゲート

TT-4



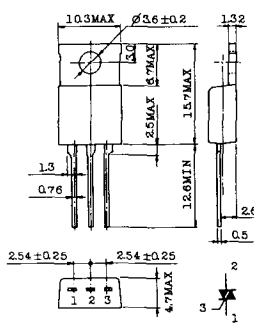
- 1 T₁
- 2 T₂
- 3 ゲート

TT-5



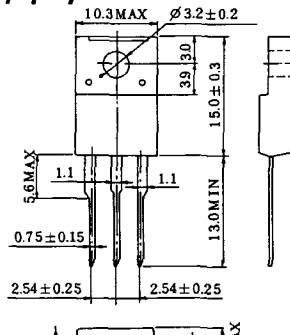
- 1 T₁
- 2 T₂
- 3 ゲート

TT-6



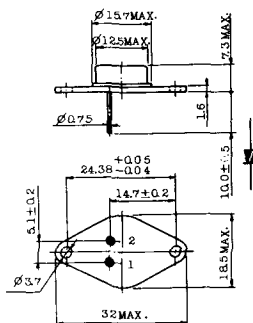
- 1 T₁
- 2 T₂ (放熱板)
- 3 ゲート

TT-7



- 1 T₁
- 2 T₂
- 3 ゲート

TT-8



- 1 ゲート
- 2 T₁
- T₂ (ケース)

TT-9



- 1. ゲート
- 2. T₁
- 3. T₂ (ケース)

TT-10



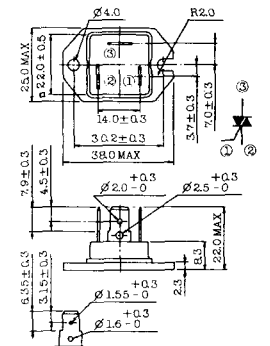
- 1. ゲート
- 2. T₁
- 3. T₂ (ケース)

TT-11



- 1. ゲート (フーストン端子 #187)
- 2. T₁ (" #250)
- 3. T₂ (" #250)

TT-12



ゲート端子詳細

- ① ゲート (フーストン端子 #187)
- ② T₁ (" #250)
- ③ T₂ (" #250)

TT-13



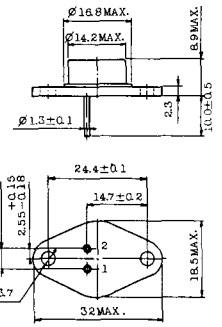
- 1, 2: T₂
- 3: GATE
- 4: T₁

TT-14



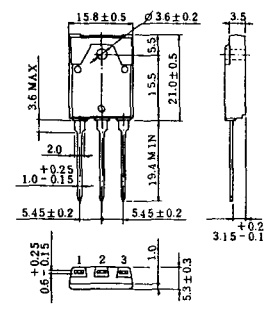
- 1, 2: T₂
- 3: GATE
- 4: T₁

TT-15 (13-14A1B)



- 1. ゲート
- 2. T₁
- T₂ (ケース)

TT-16 (13-16A1A)



- 1. T₁
- 2. T₂
- 3. ゲート

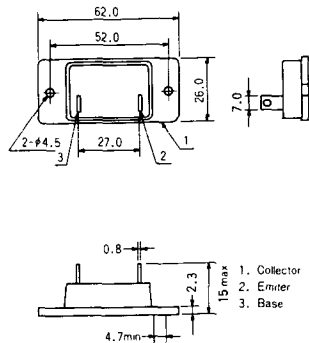


TS-8

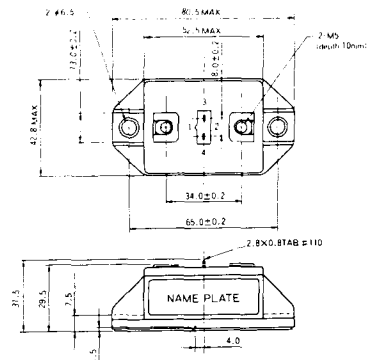


1. ベース
2. エミッタ
コレクタ
(ケース)

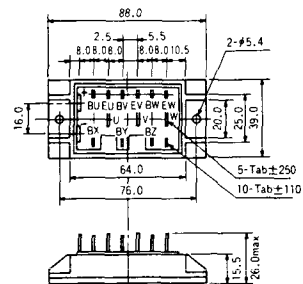
S-62A1A



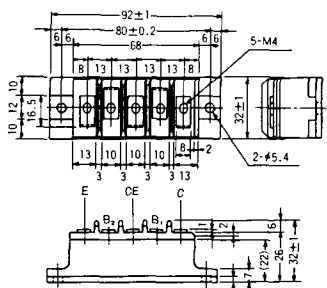
S-80A1A



S-88D1A



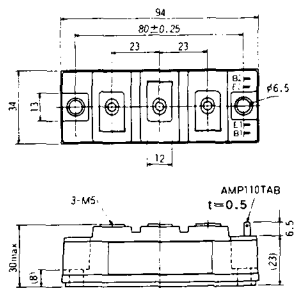
S-92B1A



S-94B1A



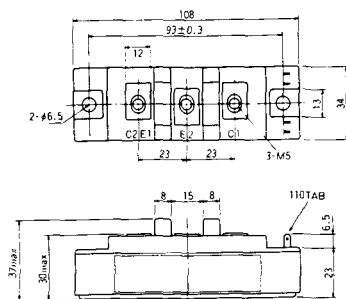
S-94B1B



S-108B1A



S-108B1B



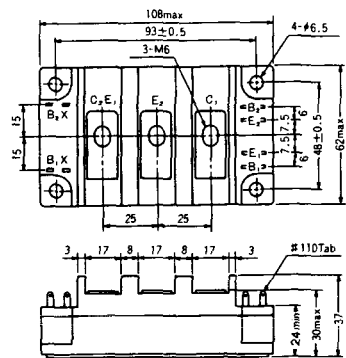
S-108B1C



S-108B2A



S-108B2B



2-22B1A



2-27A4A



2-33C1A



2-33D1A



2-33F1A



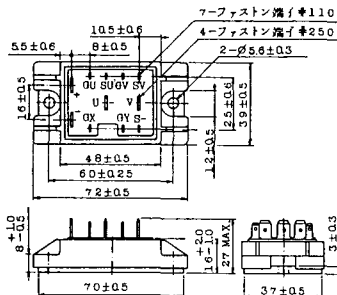
2-37A1A



2-48A3A



2-48A3B



2-48A4A



2-64A2A



2-64A2B



2-68A2A



2-68B2A



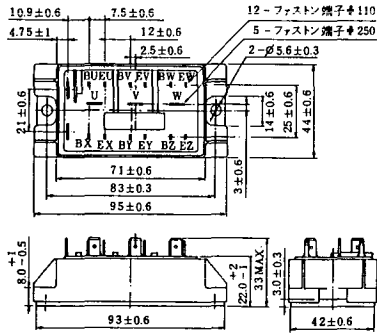
2-68C1A



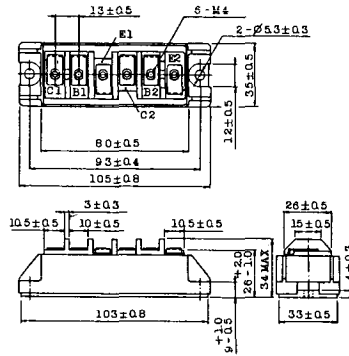
2-68D2A



2-72A3A



2-80A1A



2-80B1A



2-94D1A



2-96A3A



2-96A4A



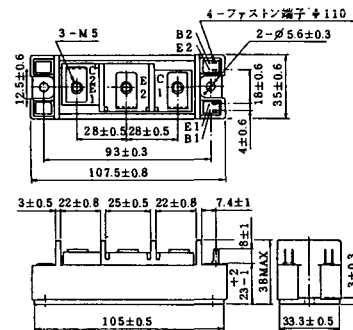
2-98B1A



2-98C2A



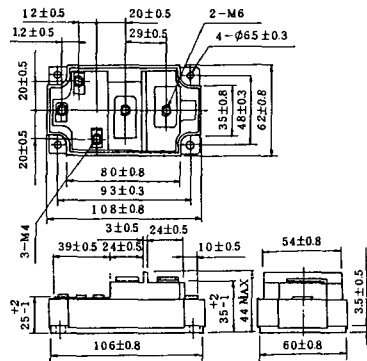
2-108A2A



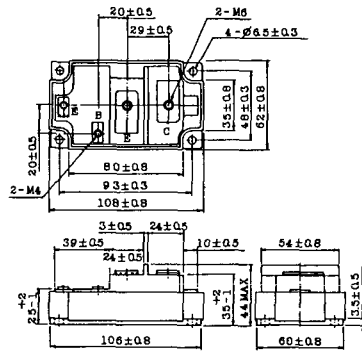
2-108B1A



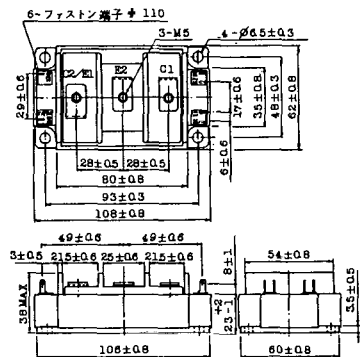
2-109A3A



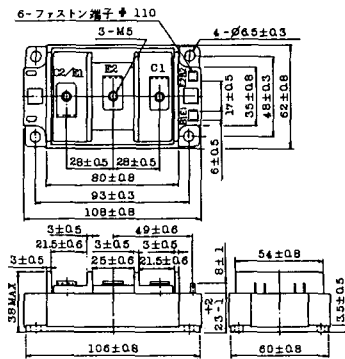
2-109A4A



2-109B3A



2-109B4A



BBT-II

BBTII
1D200A-020



BBT-III

BBTIII
ETN31-055
ETM36-030
ETN36-030
ETN35-030



BBT-III

BBTIII
ETN01-055
ET1257

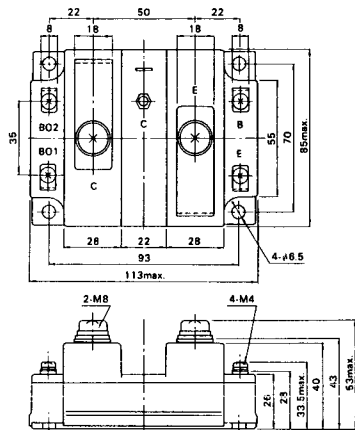


BBT-IV

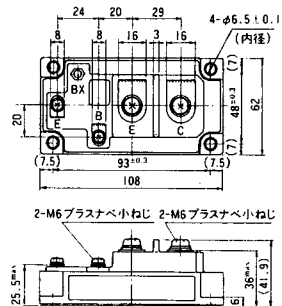
BBTIV
1D500A-030



M-107



M-116



M-201



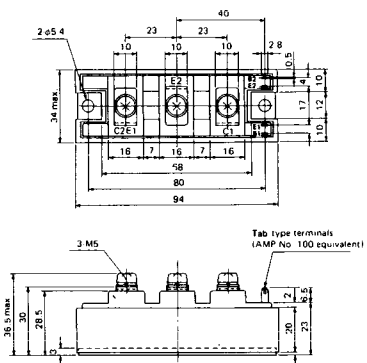
M-202



M-203



M-204



M-205



M-206



M-207



M-208



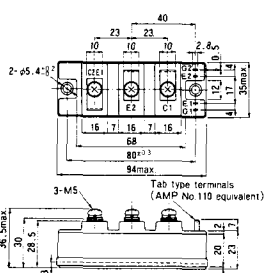
M-209



M-210



M-211



M-212



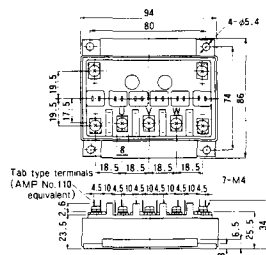
M-219



M-607



M-608



M-609



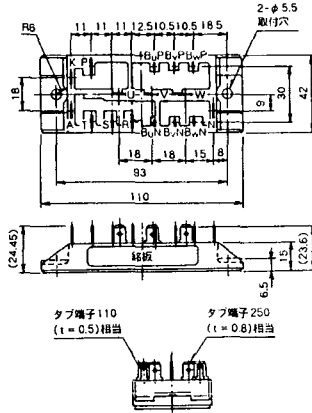
M-610



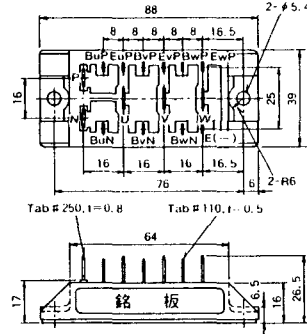
M-616



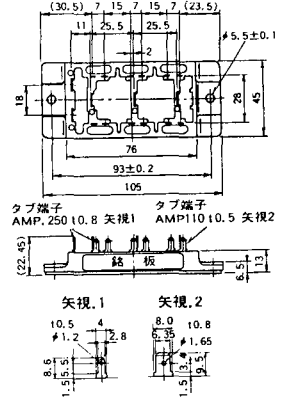
M-2E6A



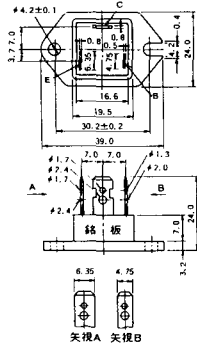
M-2F6A



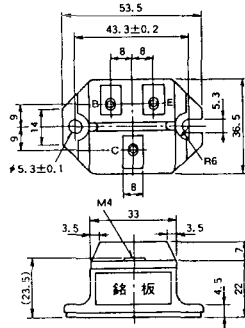
M-2G6A



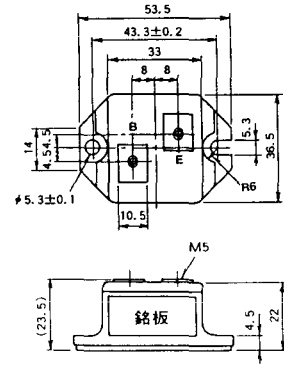
M-3A1A



M-3B1A



M-3B1B



M-3C1A



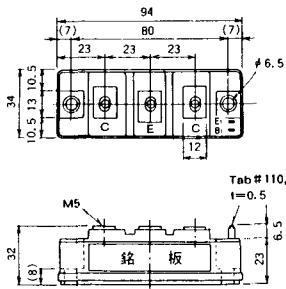
M-3D6A



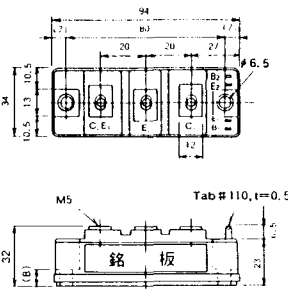
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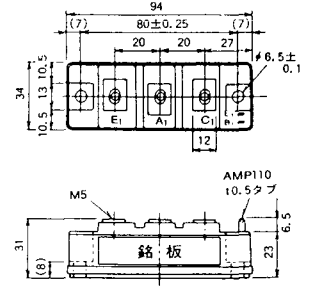
M-4A1A



M-4A2A



M-4A1B



M-4A2B



M-4B2A



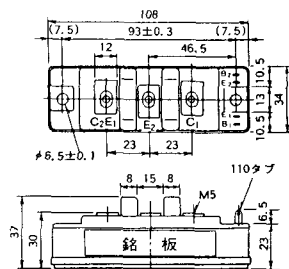
M-5A1A



M-5A1B



M-5A2A



M-5B2A



M-5C2A



M-5D2A



M-6A1A



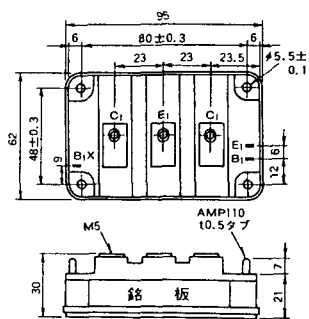
M-7A1A



M-7B1A



M-8A1A



M-10A2A



M-10A2B



M-11A2A



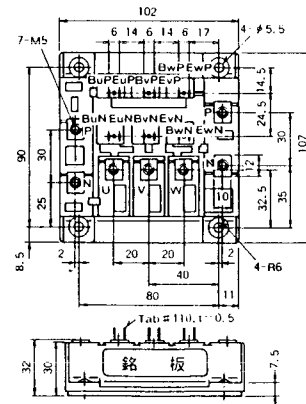
M-12A6A



M-12B6A



M-12B6B



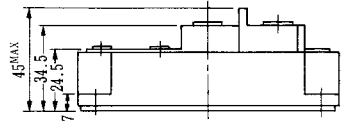
M-9D2B



M-10A2C



H-101



Weight :480g

H-201



Weight: 200g

H-202



Weight: 360g

LF-J



LF-K



