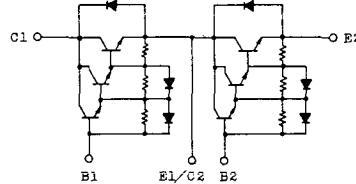


トランジスタ・モジュール (NPN, ダーリントン接続, 2個直列接続)

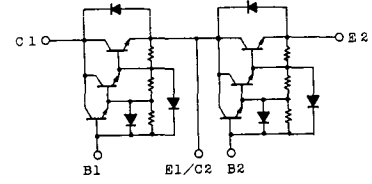
- ダーリントン・トランジスタを2個直列接続
- フリーホイール・ダイオード付
- 電極と金属ケース部が絶縁されている
- 直流電流増幅率は80以上(定格電流にて)

■等価回路

CK-1



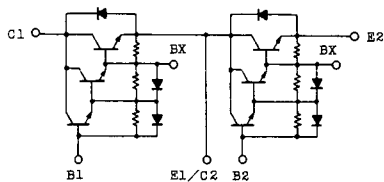
CK-2



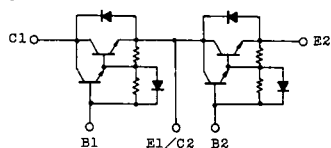
注1.  $T_c=25^{\circ}\text{C}$ . 注2. AC, 1分間。

型名	最大定格 ( $T_m=25^{\circ}\text{C}$ )											電気的特性									
	$V_{CBO}$	$V_{CEX(SUS)}$	$V_{EBO}$	$I_c$	$I_{CP}$	$I_B$	$I_F$	$I_{FM}$	$P_c$	$T_j$	$T_{Stg}$	$V_{150}$	$I_{CBO}$		$I_{EBO}$		$V_{CEO(SUS)}$		$h_{FE}$		
	(V)	(V)	(V)	(A)	(ms)	(A)	(A)	(ms)	(W)	( $^{\circ}\text{C}$ )	( $^{\circ}\text{C}$ )	(V)	最大 (mA)	$V_{CE}$ (V)	最大 (mA)	$V_{EB}$ (V)	最大 (V)	$I_c$ (A)	最小 (V)	$V_{CE}$ (V)	$I_c$ (A)
MG15N2CK1	1100	1100	7	15	30	1.5	15	30	150	150	-40~125	2500	1.0	1100	200	7	900	1.0	100	5	15
MG15N2YK1	1100	1100	7	15	30	1.5	15	30	150	150	-40~125	2500	1.0	1100	200	7	900	1.0	100	5	15
MG25M2CK2	1000	1000	7	25	50	2.5	25	50	300	150	-40~125	2500	1.0	1000	200	7	880	1.0	100	5	25
MG25M2YK1	1000	1000	7	25	50	2.5	25	50	300	150	-40~125	2500	1.0	1000	200	7	880	1.0	100	5	25
MG25M2YK9	1000	1000	7	25	50	2.5	25	50	300	150	-40~125	2500	1.0	1000	200	7	880	1.0	100	5	25
MG25N2CK1	1100	1100	7	25	50	2.5	25	50	300	150	-40~125	2500	1.0	1100	200	7	900	0.5	100	5	25
MG25N2YK1	1100	1100	7	25	50	2.5	25	50	300	150	-40~125	2500	1.0	1100	200	7	900	0.5	100	5	25
MG30G2CL3	600	600	6	30	60	3.0	30	60	250	150	-40~125	2500	1.0	600	200	6	450	0.5	100	5	30
MG30G2YL1	600	600	6	30	60	3.0	30	60	200	150	-40~125	2500	1.0	600	200	6	450	0.5	100	5	30
MG40S2YK1	1400	1400	7	40	80	4.0	40	80	400	150	-40~125	2500	2.0	1400	150	7	1000	1.0	100	5	40
MG50G2CL3	600	600	6	50	100	5.0	50	100	300	150	-40~125	2500	1.0	600	200	6	450	0.5	100	5	50
MG50G2YL1A	600	600	6	50	100	5.0	50	100	300	150	-40~125	2500	1.0	600	200	6	450	0.5	100	5	50
MG50M2CK2	1000	1000	7	50	100	5.0	50	100	350	150	-40~125	2500	1.0	1000	200	7	880	1.0	100	5	50
MG50M2YK1	1000	1000	7	50	100	5.0	50	100	350	150	-40~125	2500	1.0	1000	200	7	880	1.0	100	5	50
MG50M2YK9	1000	1000	7	50	100	5.0	50	100	350	150	-40~125	2500	1.0	1000	200	7	880	1.0	100	5	50
MG50N2CK1	1100	1100	7	50	100	5.0	50	100	350	150	-40~125	2500	1.0	1100	200	7	900	1.0	100	5	50
MG50Q2YK1	1200	1200	7	50	100	5.0	50	100	350	150	-40~125	2500	1.0	1200	200	7	900	1.0	100	5	50
MG75G2CL1	600	600	6	75	150	10	75	150	350	150	-40~125	2500	1.0	600	200	6	450	0.5	80	5	75
MG75G2YL1A	600	600	6	75	150	10	75	150	350	150	-40~125	2500	1.0	600	200	6	450	0.5	80	5	75
MG75H2CL1	600	600	6	75	150	10	75	150	350	150	-40~125	2500	1.0	600	200	6	500	0.5	80	5	75
MG75H2YL1A	600	600	6	75	150	10	75	150	350	150	-40~125	2500	1.0	600	200	6	500	0.5	80	5	75

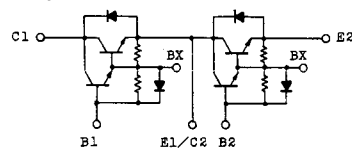
CK-3



CL-1



CL-2



注3. スイッチング時間の \* 印はtyp. 値。

(T <sub>a</sub> =25°C)										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		
飽和電圧 (V)		I <sub>c</sub> (A)	I <sub>B</sub> (A)	スイッチング時間 (μs)			I <sub>B1</sub> (A)	I <sub>B2</sub> (A)	V <sub>CC</sub> (V)	R <sub>L</sub> (Ω)	V <sub>F</sub> (V)	I <sub>F</sub> (A)	t <sub>rr</sub> (μs)	I <sub>F</sub> (A)	V <sub>BE</sub> (V)	di/dt (A/μs)					R <sub>th(j-c)</sub> (°C/W)	
V <sub>CE</sub>	V <sub>BE</sub>			t <sub>on</sub>	t <sub>stg</sub>	t <sub>r</sub>															トランジスタ部	ダイオード部
最大	最大			最大	最大	最大				最大	最大	最大	最大	最大	最大	最大	最大	最大				
2.5	3.5	15	0.3	2	11	6	0.3	-0.9	600	40	1.5	15	1.0	15	-3	60	0.83	1.3	CK-2	2-68B2A		MG15N2CK1
2.5	3.5	15	0.3	2	11	6	0.3	-0.9	600	40	1.5	15	1.0	15	-3	60	0.83	1.3	YK-1	2-94C3A		MG15N2YK1
2.5	3.5	25	0.5	2	15	5	0.5	-0.5	600	24	1.7	25	1.0	25	-3	100	0.41	1.3	CK-2	2-68B2A		MG25N2CK2
2.5	3.5	25	0.5	2	15	5	0.5	-0.5	600	24	1.7	25	1.0	25	-3	100	0.41	1.3	YK-1	2-94C3A		MG25N2YK1
2.5	3.5	25	0.5	2	15	5	0.5	-0.5	600	24	1.7	25	1.0	25	-3	100	0.41	1.3	YK-1	2-94D1A		MG25N2YK9
2.5	3.5	25	0.5	2	14	6	0.5	-1.5	600	24	1.7	25	1.0	25	-3	100	0.41	1.3	CK-2	2-68B2A		MG25N2CK1
2.5	3.5	25	0.5	2	14	6	0.5	-1.5	600	24	1.7	25	1.0	25	-3	100	0.41	1.3	YK-1	2-94C3A		MG25N2YK1
2.0	2.5	30	0.6	1	12	2	0.6	-0.6	300	10	1.5	30	1.0	30	-3	100	0.5	1.8	CL-1	2-68A2A		MG30G2CL3
2.0	2.5	30	1.0	1	12	3	0.6	-0.6	300	10	1.6	30	1.0	30	-2	60	0.625	1.8	YL-1	2-94C3A		MG30G2YL1
2.5	3.5	40	0.8	2	17	3	0.8	-2.4	600	15	1.8	40	1.2	40	-3	100	0.31	1.3	YK-1	2-108A2A		MG40S2YK1
2.0	2.5	50	1.0	1	12	2	1.0	-1.0	300	6	1.5	50	1.0	50	-3	100	0.41	1.3	CL-1	2-68A2A		MG50G2CL3
2.0	2.5	50	1.0	1	12	2	1.0	-1.0	300	6	1.7	50	1.0	50	-3	100	0.41	1.3	YL-1	2-94C3A		MG50G2YL1A
2.5	3.5	50	1.0	2	15	5	1.0	-1.0	600	12	1.7	50	1.0	50	-3	100	0.36	1.3	CK-2	2-68B2A		MG50M2CK2
2.5	3.5	50	1.0	2	15	5	1.0	-1.0	600	12	1.7	50	1.0	50	-3	100	0.36	1.3	YK-1	2-94C3A		MG50M2YK1
2.5	3.5	50	1.0	2	15	5	1.0	-1.0	600	12	1.7	50	1.0	50	-3	100	0.36	1.3	YK-1	2-94D1A		MG50M2YK9
2.5	3.5	50	1.0	2	15	5	1.0	-3.0	600	12	1.8	50	2.0	50	-3	100	0.35	1.3	CK-2	2-68B2A		MG50N2CK1
2.5	3.2	50	1.0	2	13	4	1.0	-3.0	600	12	1.8	50	1.0	50	-3	100	0.35	1.3	YK-1	2-94C3A		MG50N2YK1
2.0	2.5	75	1.5	2	12	2	1.5	-1.5	300	4	1.5	75	2.0	75	-3	100	0.35	1.3	CL-1	2-68A2A		MG75G2CL1
2.0	2.5	75	1.5	2	12	2	1.5	-1.5	300	4	1.7	75	1.0	75	-3	100	0.36	1.3	YL-1	2-94C3A		MG75G2YL1A
2.0	2.5	75	2.0	2	12	4	2.0	-2.0	300	4	1.5	75	2.0	75	-3	100	0.35	1.3	CL-1	2-68A2A		MG75H2CL1
2.0	2.5	75	2.0	2	12	4	2.0	-2.0	300	4	1.7	75	1.0	75	-3	100	0.35	1.3	YL-1	2-94C3A		MG75H2YL1A

FD-1



FD-2



FD-3



FD-4



FD-5



FD-6



FD-7



FD-8



FD-9



FD-10



FD-12







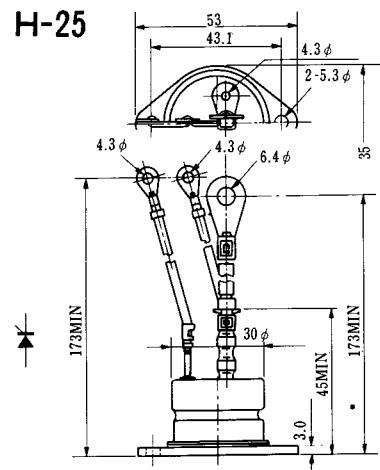
### H-23



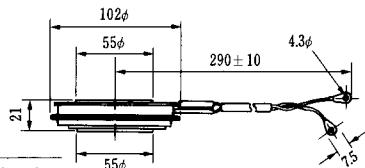
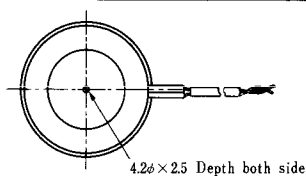
### H-24



### H-25



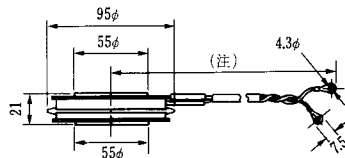
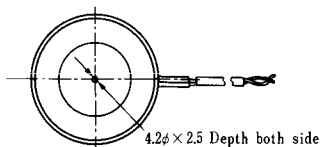
### H-26



Type	Direction of polarity
------	-----------------------

CA12	
------	--

### H-27

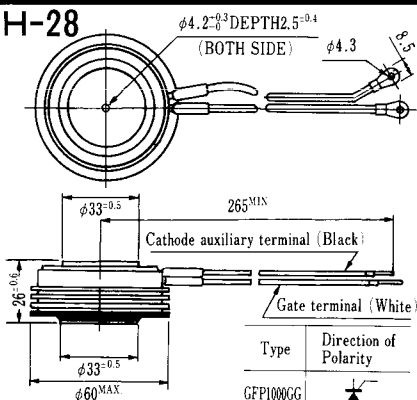


Type	Direction of polarity
------	-----------------------

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)



### M-1



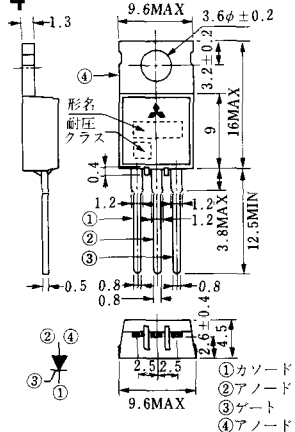
### M-2



### M-3



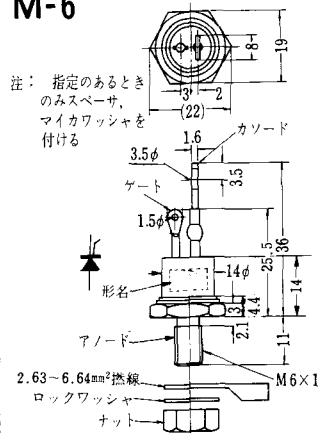
### M-4



### 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



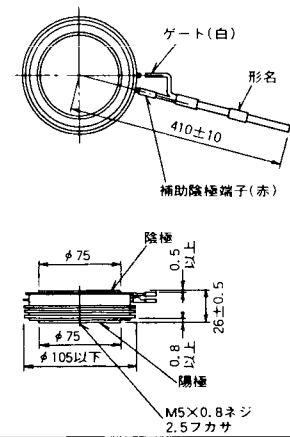
M-28



M-29



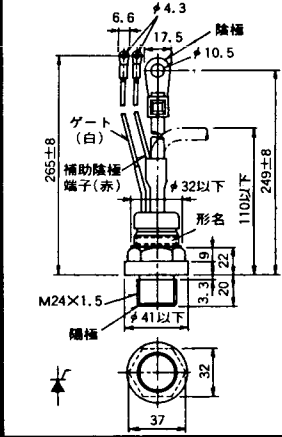
M-30



M-31



M-32



### M-33



### M-34



TO-202

### MT-1



### MT-2



### MT-3



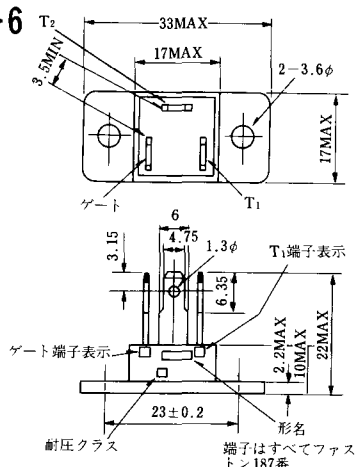
### MT-4



### MT-5



### MT-6



### MT-7





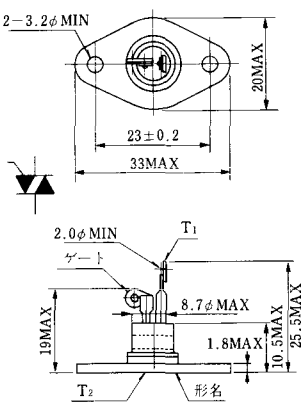
MT-8



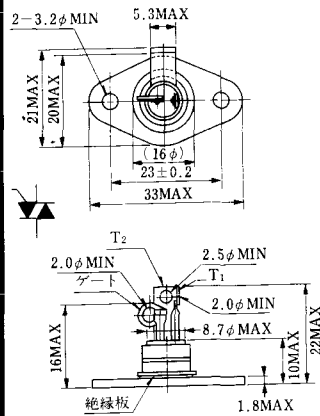
MT-9



MT-10



MT-11



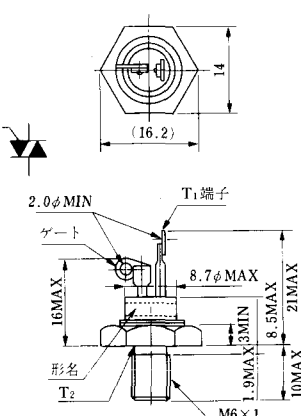
MT-12



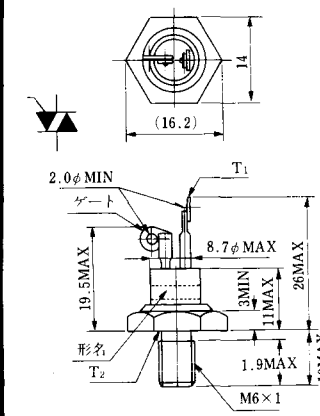
MT-13



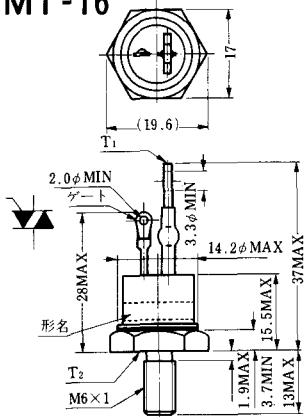
MT-14



MT-15



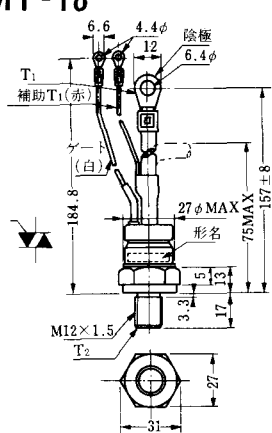
MT-16



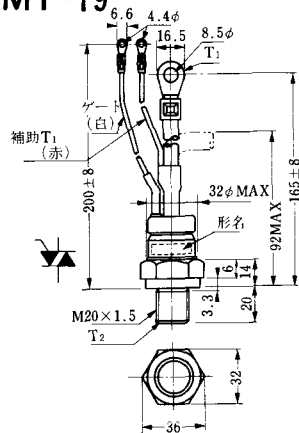
MT-17



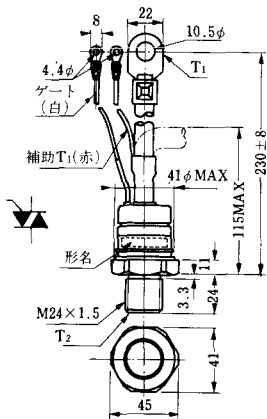
MT-18



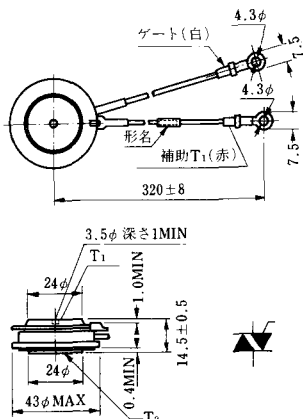
MT-19



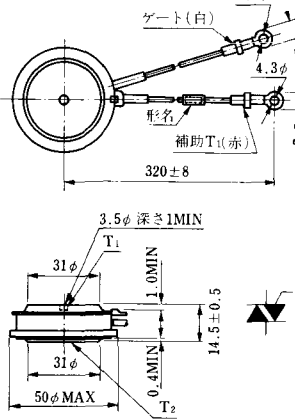
MT-20



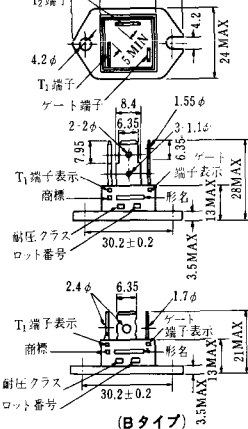
MT-21



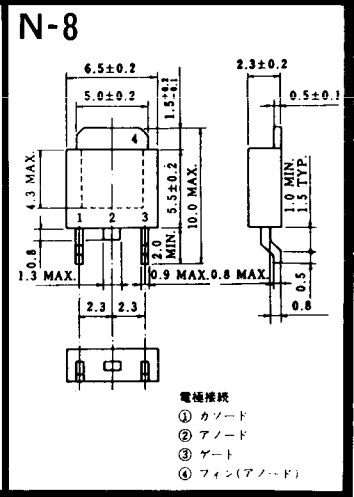
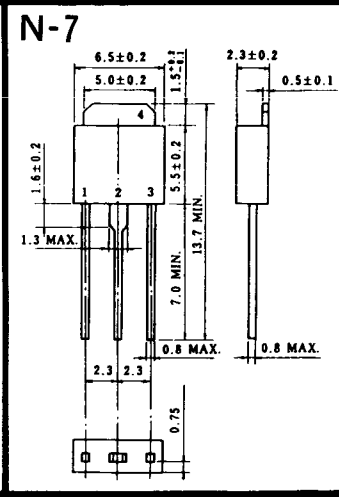
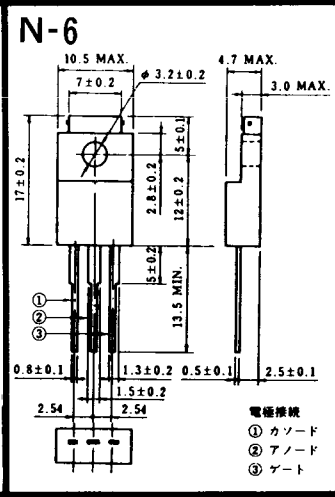
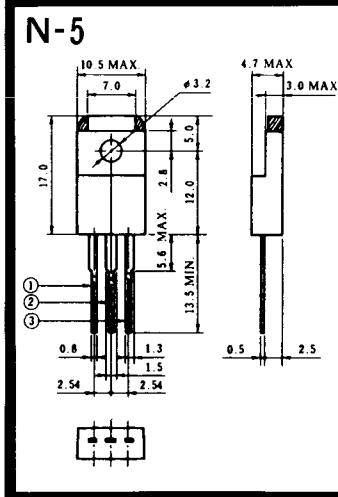
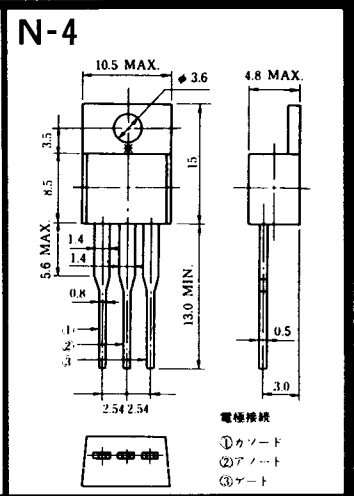
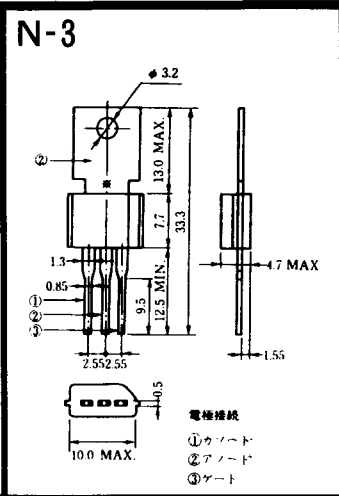
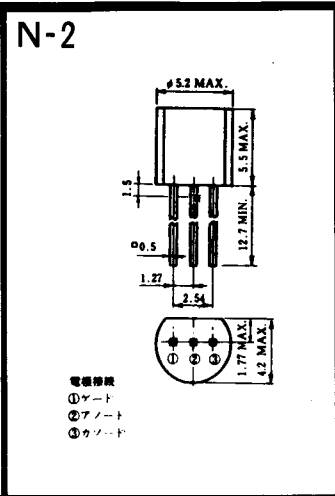
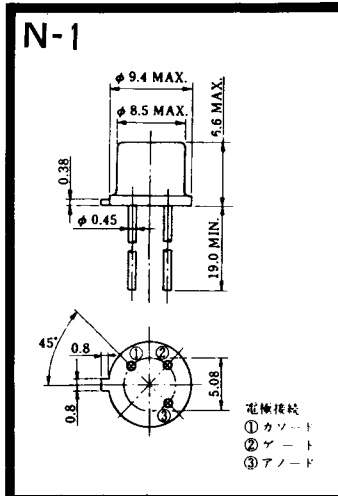
MT-22



MT-23







N-9



電極接続

K : カソード

A : アノード

G : ゲート

### NA-1

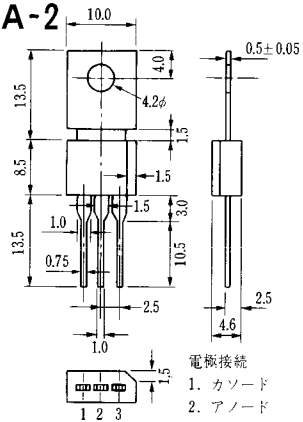


電極接続

1. ゲート
2. アノード
3. カソード

JEDEC: TO-92

### NA-2



電極接続

1. カソード
2. アノード
3. ゲート

JEDEC: TO-202AA









NI-24

2001PGB<sup>r</sup> JE



NI-25

NI-26

### NT-1



電極接続  
① T<sub>1</sub>  
② ゲート  
③ T<sub>2</sub>

### NT-2



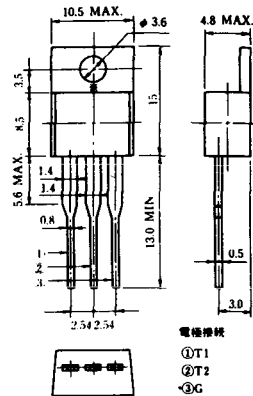
電極接続  
① T<sub>1</sub>  
② ゲート  
③ T<sub>2</sub>

### NT-3



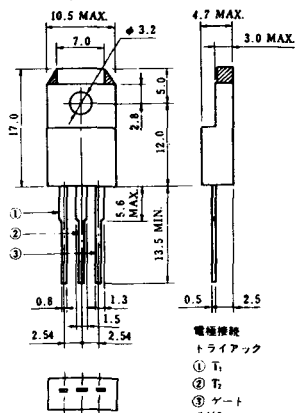
電極接続  
① T<sub>1</sub>  
② T<sub>2</sub>  
③ ゲート

### NT-4



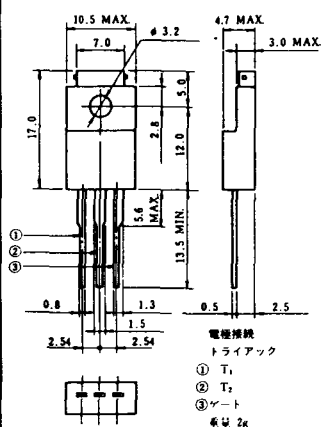
電極接続  
① T<sub>1</sub>  
② T<sub>2</sub>  
③ G

### NT-5



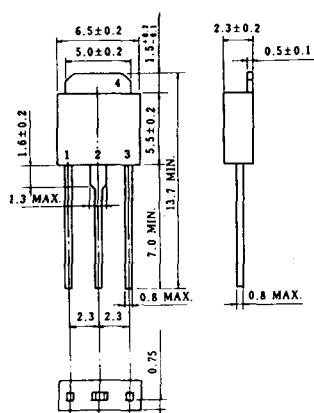
電極接続  
トライアック  
① T<sub>1</sub>  
② T<sub>2</sub>  
③ ゲート  
④ G

### NT-6

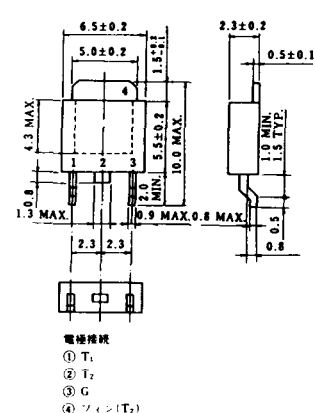


電極接続  
トライアック  
① T<sub>1</sub>  
② T<sub>2</sub>  
③ ゲート  
④ G

### NT-7



### NT-8



電極接続  
① T<sub>1</sub>  
② T<sub>2</sub>  
③ G  
④ ソフト(T<sub>2</sub>)

### S-1



### ST-1



SA-1



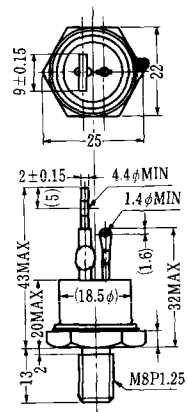
SA-2



SA-3



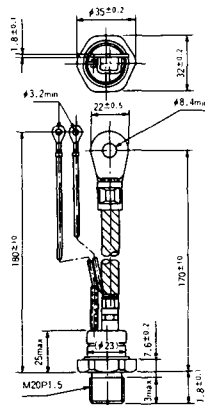
SA-4



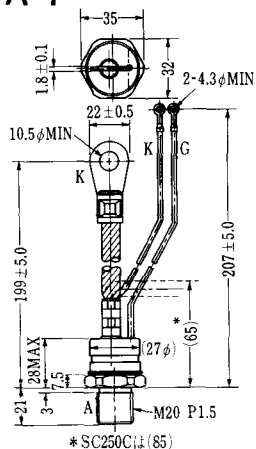
SA-5



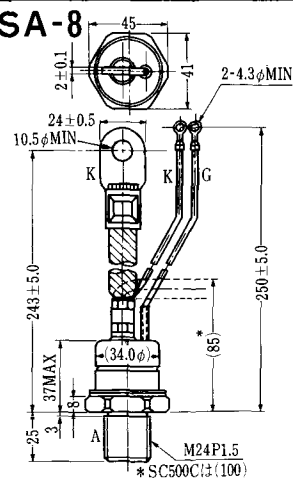
SA-6



SA-7



SA-8







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



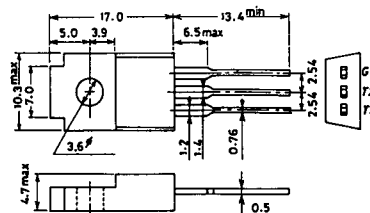
1141



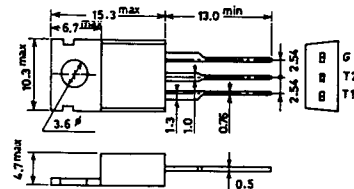
1142



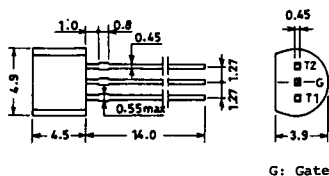
1144



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)**



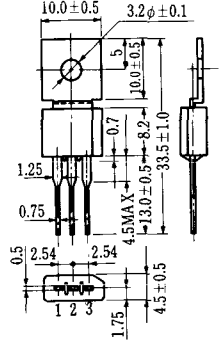
1. カソード
2. ゲート
3. アノード(ケース)

**T-3 (13-8C1A)**



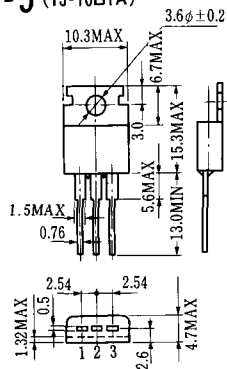
アノード

**T-4 (13-10A1A)**



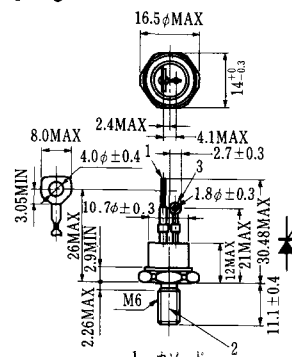
- 1 カソード
- 2 アノード
- 3 ゲート

**T-5 (13-10B1A)**



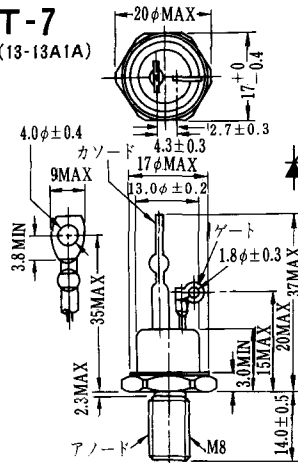
- 1 カソード
- 2 アノード
- 3 ゲート

**T-6 (13-11D1A)**



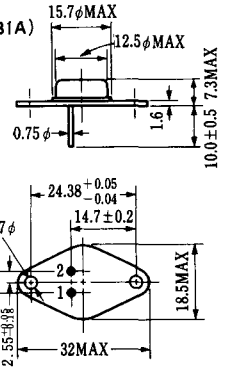
- 1 カソード
- 2 アノード
- 3 ゲート

**T-7 (13-13A1A)**



アノード

**T-8 (13-13B1A)**

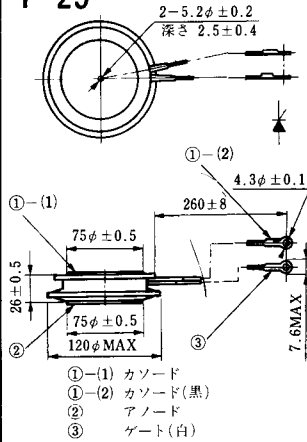


1. ゲート
2. カソード
3. アノード(ケース)





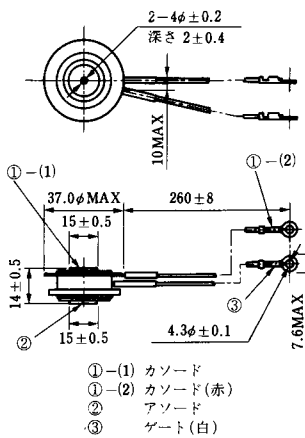
**T-25** (13-120A2A)



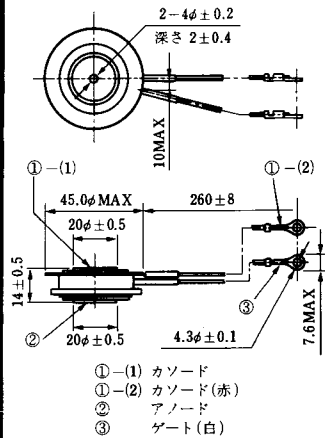
**T-26** (13-150A1A)



**T-27** (13-37A1A)



**T-28** (13-45E1A)



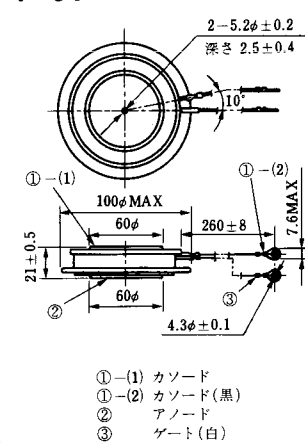
**T-29** (13-51A1A)



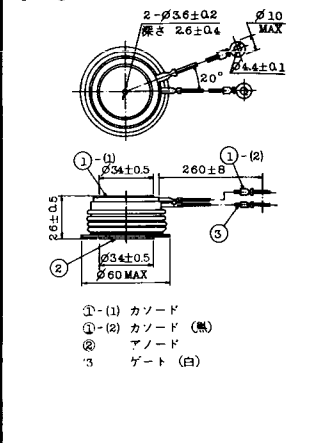
**T-30** (13-57A1A)



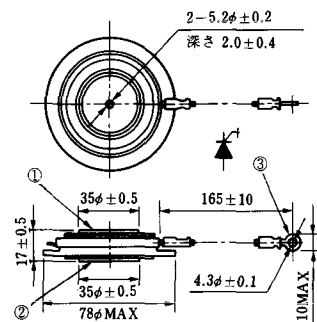
**T-31** (13-100E1A)



**T-32** (13-60E3A)

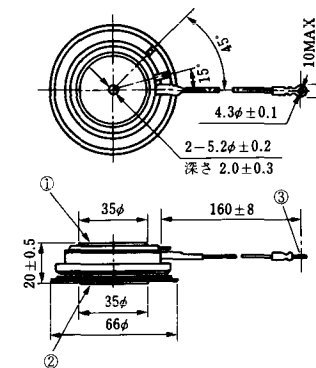


**T-33 (13-78B1A)**



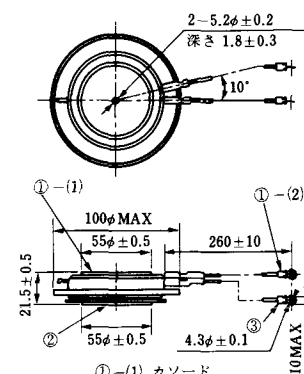
- ① カソード
- ② アノード
- ③ ゲート

**T-34 (13-66A1A)**



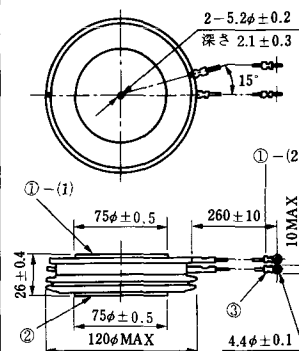
- ① カソード
- ② アノード
- ③ ゲート

**T-35 (13-100D1A)**



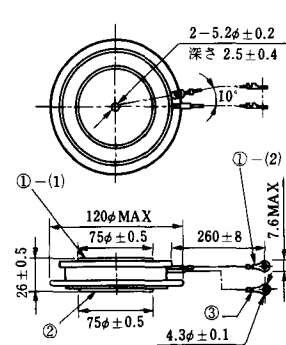
- ①-(1) カソード
- ①-(2) カソード(黒)
- ② アノード
- ③ ゲート(白)

**T-36 (13-120E1A)**



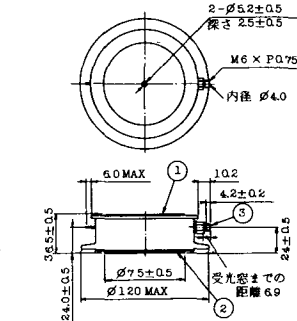
- ①-(1) カソード
- ①-(2) カソード(黒)
- ② アノード
- ③ ゲート(白)

**T-37 (13-120A1A)**



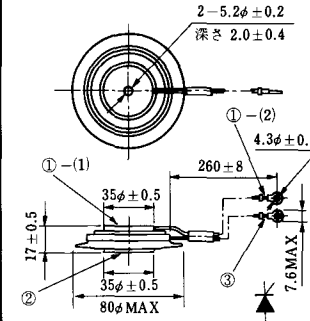
- ①-(1) カソード
- ①-(2) カソード(黒)
- ② アノード
- ③ ゲート(白)

**T-38 (13-120C1A)**



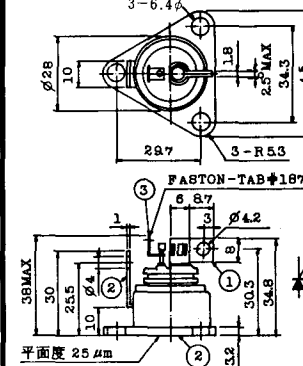
- ① カソード
- ② アノード
- ③ ゲート

**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)**

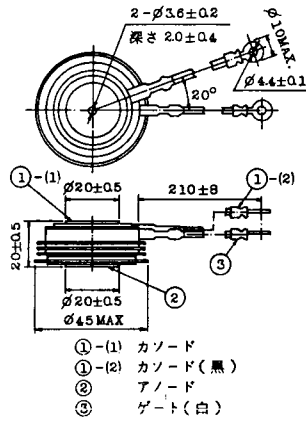


- 1. カソード
- 2. アノード
- 3. ゲート

### T-41 (13-28A2A)



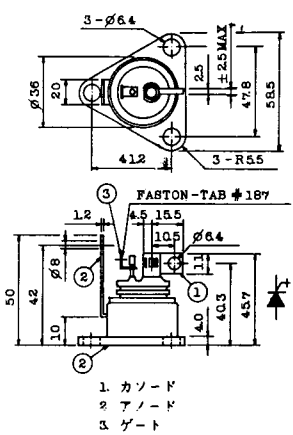
### T-42 (13-45F1A)



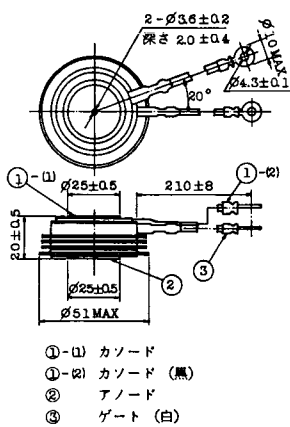
### T-43 (13-60E2A)



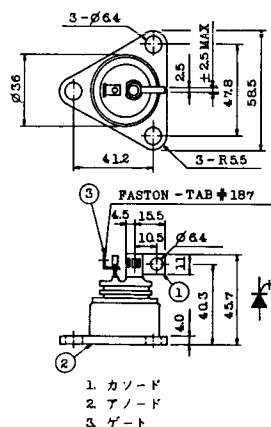
### T-44 (13-36A1A)



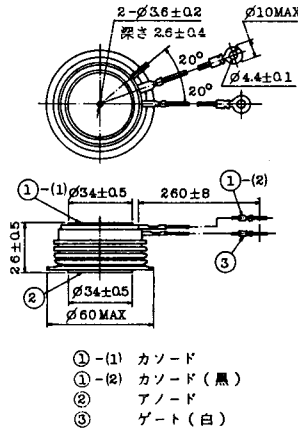
### T-45 (13-51B1A)



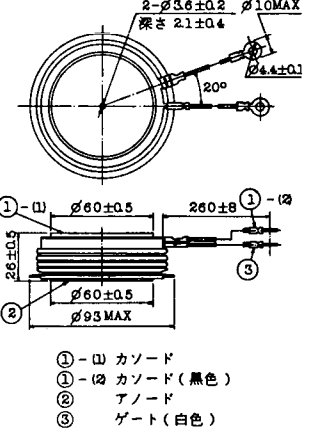
### T-46 (13-36B1A)



### T-47 (13-60E1A)



### T-48 (13-93C1A)





**T-49** (13-75A1A)



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

**T-50** (13-10A3A)



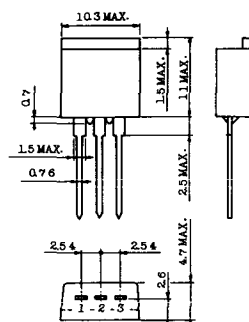
- 1 カソード
- 2 アノード
- 3 ゲート

**T-51** (13-10D1A)



- 1 カソード
- 2 アノード
- 3 ゲート

**T-52** (13-10D2A)



- 1 カソード
- 2 アノード
- 3 ゲート

**T-53** (13-10E1B)



- 1 カソード
- 2 アノード
- 3 ゲート

**T-54** (13-10F1B)



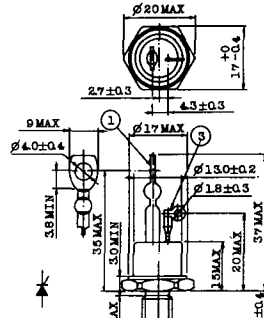
- 1 カソード
- 2 アノード
- 3 ゲート

**T-55** (13-5A1D)



- 1 カソード
- 2 アノード
- 3 アノード

**T-56** (13-13C1A)



- 1 カソード
- 2 アノード
- 3 ゲート

T-57 (12-16C1A)



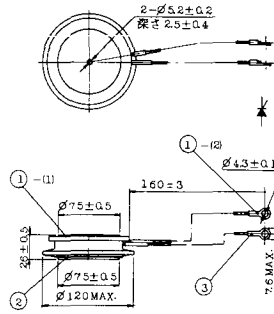
1. アノード (主)
2. ゲート (主)
3. カソード (共通)
4. ゲート (補助)
5. アノード (補助)

T-58 (13-10H1B)



1. カソード
2. アノード
3. ゲート

T-59 (13-120A1A)



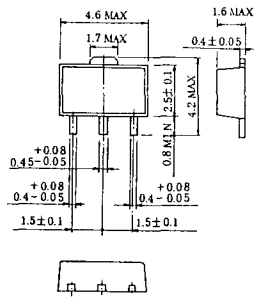
- 1-1) カソード
- 1-12) カソード (黒)
- 2) アノード
- 3) ゲート (白)

T-60



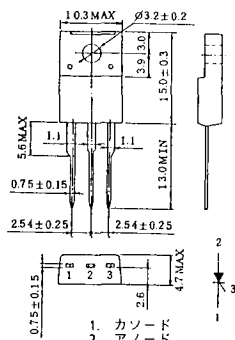
1. カソード
2. アノード
3. ゲート

T-61 (13-5B1A)



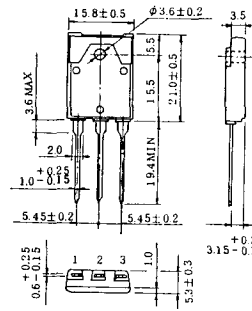
1. ゲート
2. アノード
3. カソード

T-62 (13-10H1A)



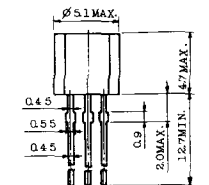
1. カソード
2. アノード
3. ゲート

T-63 (13-16A1B)



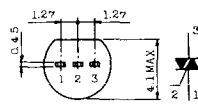
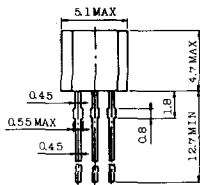
1. カソード
2. アノード
3. ゲート

TT-1



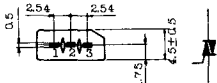
- 1 ゲート
- 2 T<sub>2</sub>
- 3 T<sub>1</sub>

TT-2



- 1 T<sub>1</sub>
- 2 ゲート
- 3 T<sub>2</sub>

TT-3



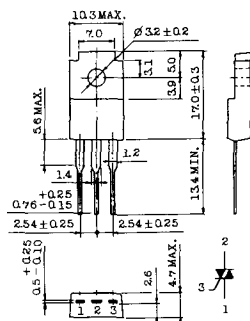
- 1 T<sub>1</sub>
- 2 T<sub>2</sub>
- 3 ゲート

TT-4



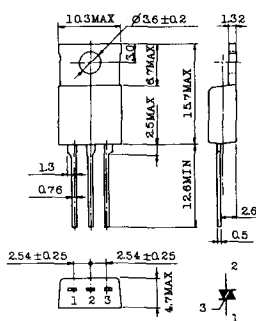
- 1 T<sub>1</sub>
- 2 T<sub>2</sub>
- 3 ゲート

TT-5



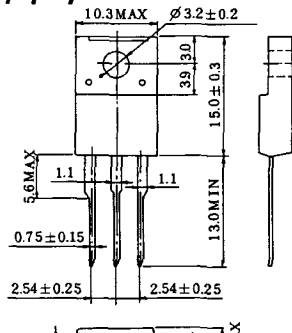
- 1 T<sub>1</sub>
- 2 T<sub>2</sub>
- 3 ゲート

TT-6



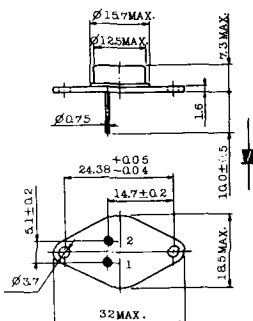
- 1 T<sub>1</sub>
- 2 T<sub>2</sub> (放熱板)
- 3 ゲート

TT-7



- 1 T<sub>1</sub>
- 2 T<sub>2</sub>
- 3 ゲート

TT-8

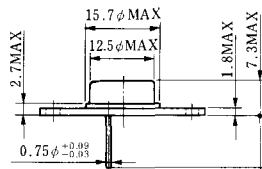


- 1 ゲート
- 2 T<sub>1</sub>
- T<sub>2</sub> (ケース)



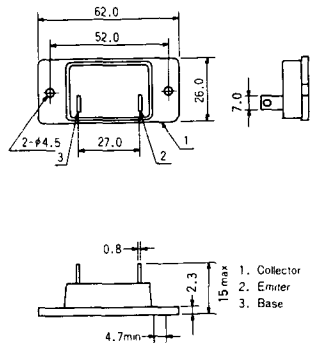


# TS-8

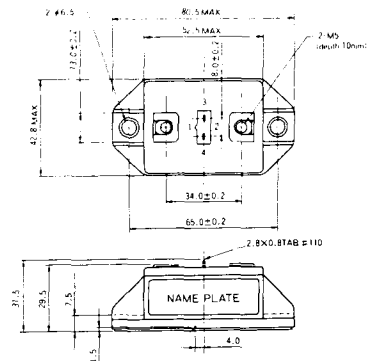


- 1. ベース
- 2. エミッタ  
コレクタ  
(ケース)

### S-62A1A



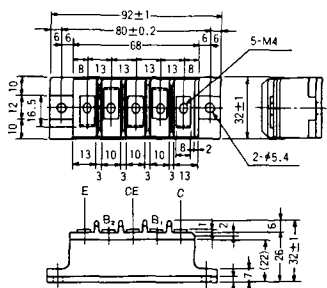
### S-80A1A



### S-88D1A



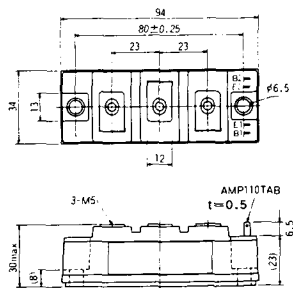
### S-92B1A



### S-94B1A



### S-94B1B



S-94B2A



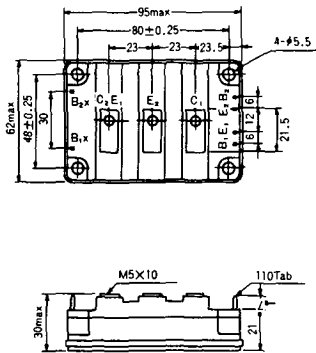
S-94D1A



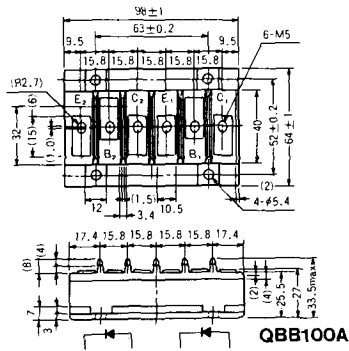
S-95A1A



S-95B1A



S-98B1B



S-108A2A

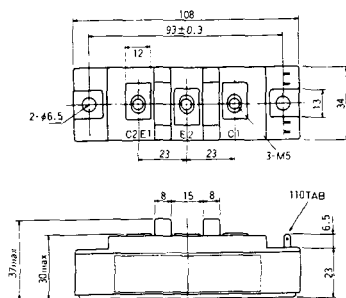




S-108B1A



S-108B1B



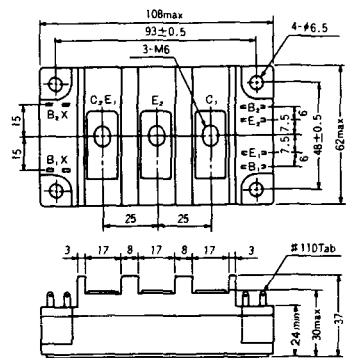
S-108B1C



S-108B2A



S-108B2B



2-22B1A



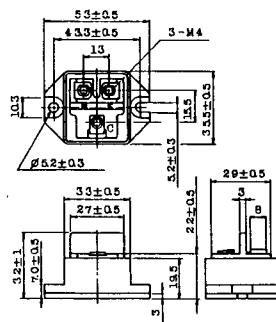
2-27A4A



2-33C1A



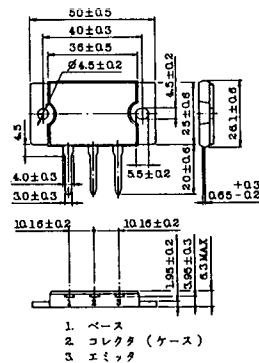
2-33D1A



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



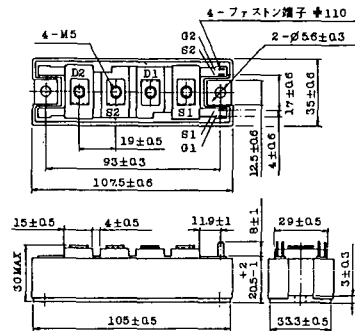
### 2-98C2A



### 2-108A2A



### 2-108B1A



### 2-109A3A



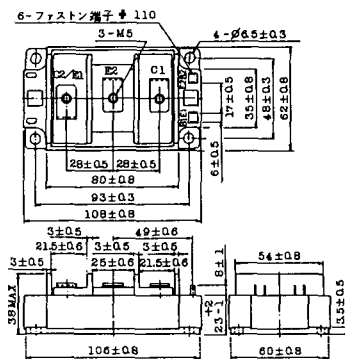
### 2-109A4A



### 2-109B3A

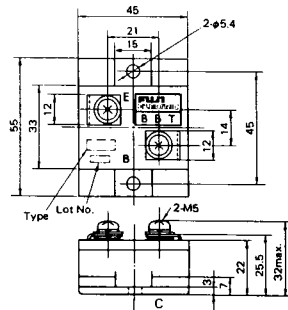


### 2-109B4A



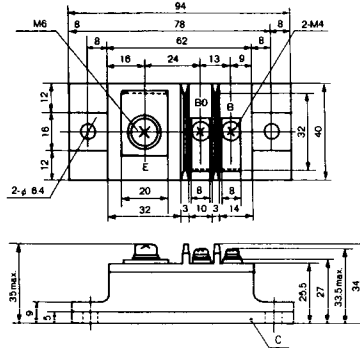
### BBT-II

BBTII  
1D200A-020



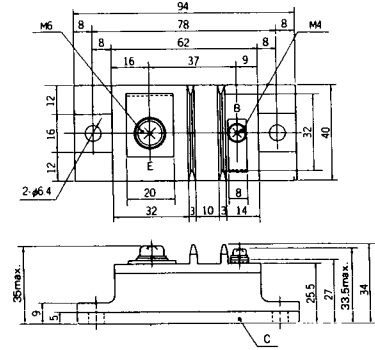
### BBT-III

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



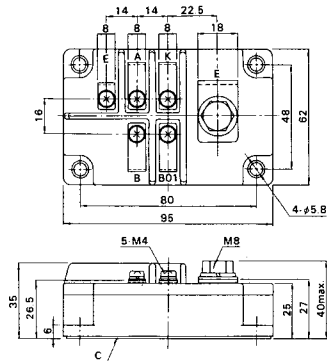
### BBT-III

BBTIII  
ETN01-055  
ET1257



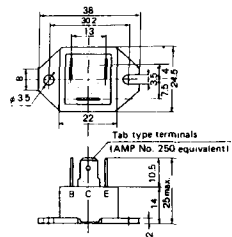
### BBT-IV

BBTIV  
1D500A-030





M-101



M-102



M-103



M-104



M-105



M-106



### M-107

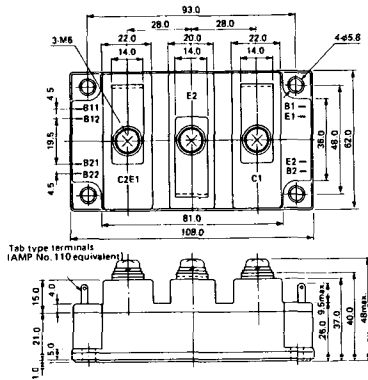


### M-116

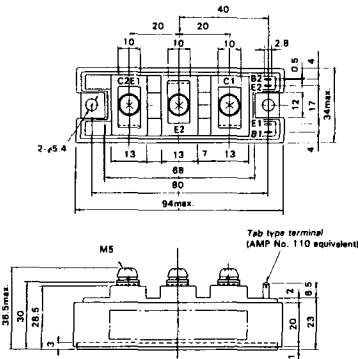




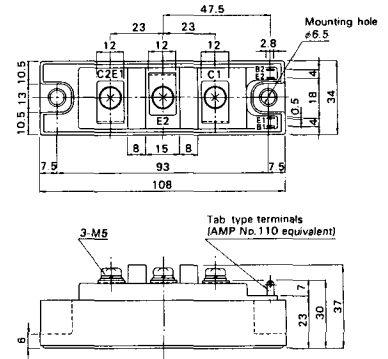
### M-207



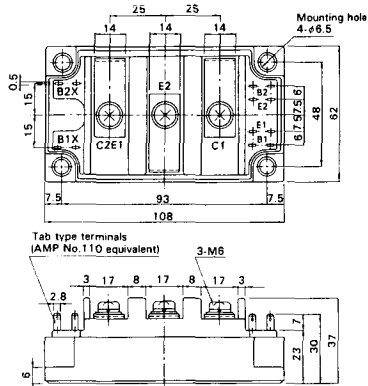
### M-208



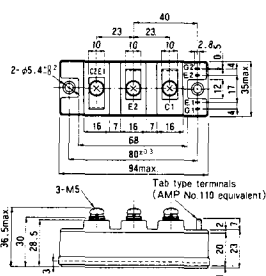
### M-209



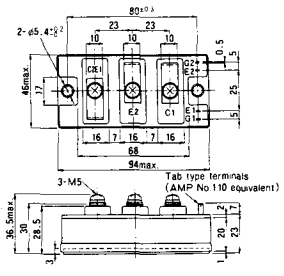
### M-210



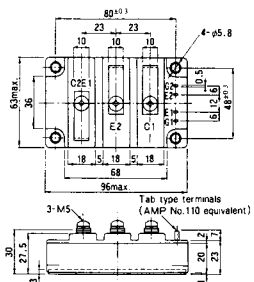
### M-211



### M-212



M-213

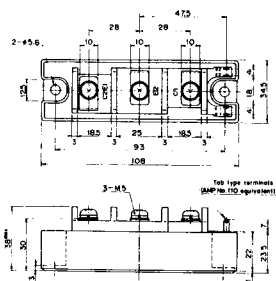


M-214

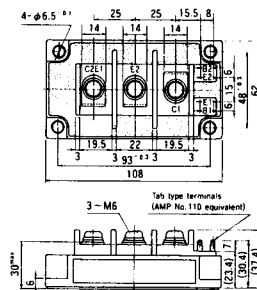
M-215



M-216



M-217



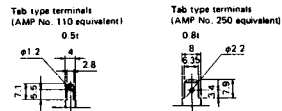
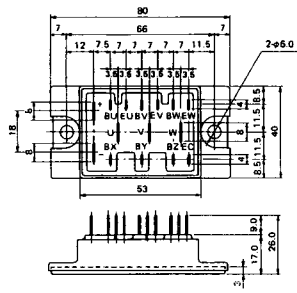
M-218



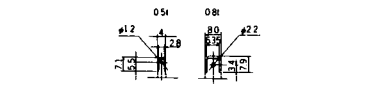
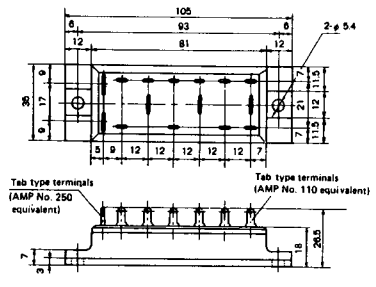
M-219



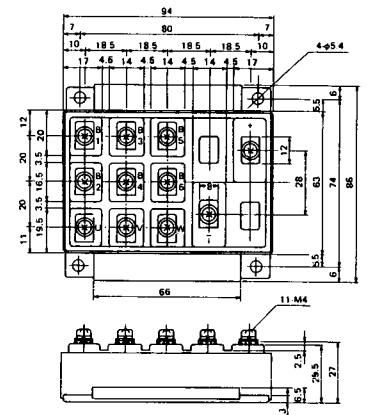
M-601



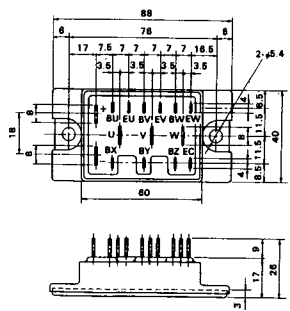
M-602



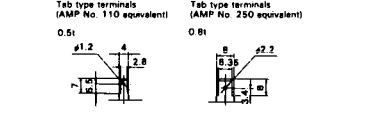
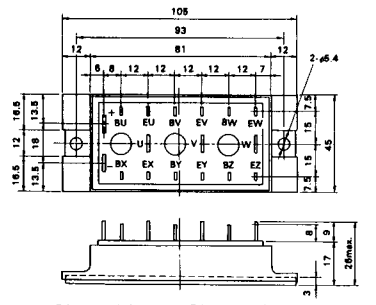
M-603



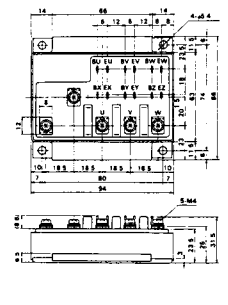
M-604



M-605



M-606







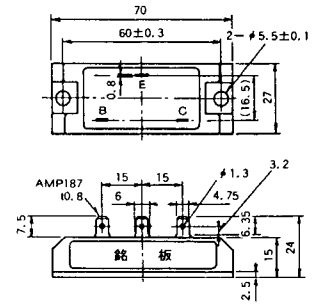
M-1A1A



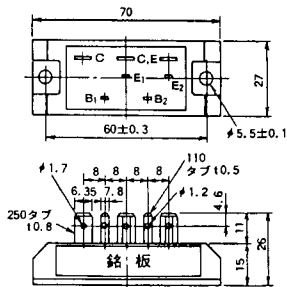
M-2A1A



M-2B1A



M-2B2A



M-2C2A



M-2D4A





M-3C1A



M-3D6A



M-3E6A



M-4A1A



M-4A2A



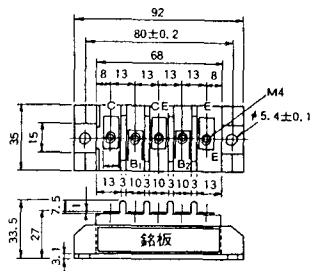
M-4A1B



M-4A2B



M-4B2A



M-5A1A



M-5A1B



M-5A2A



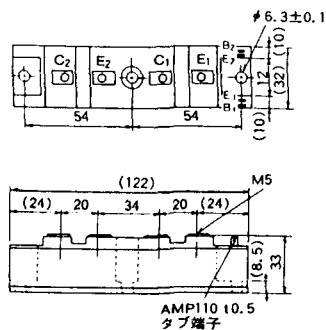
M-5B2A



M-5C2A



M-5D2A



M-6A1A



M-7A1A



M-7B1A

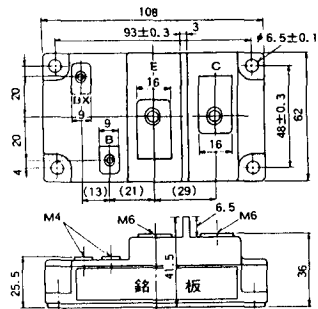


M-8A1A

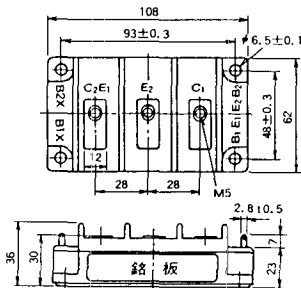




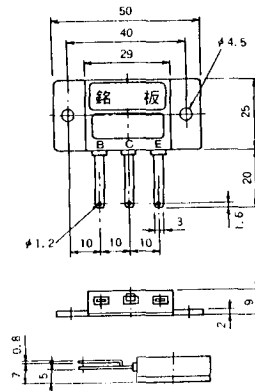
M-9B1A



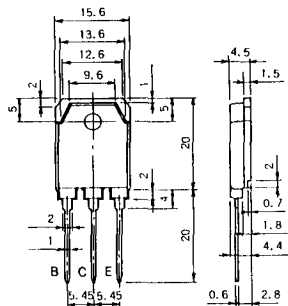
M-9C2A



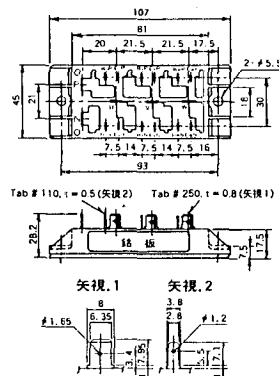
M-1A1B



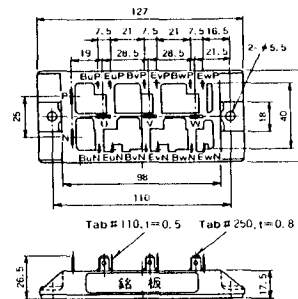
M-1A1C



M-2E6B



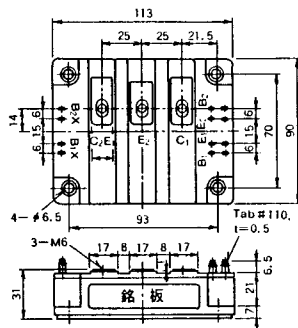
M-2E6C



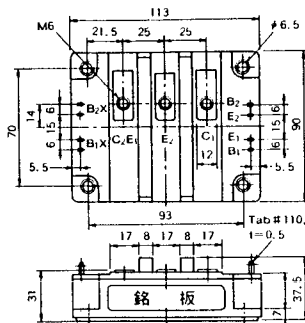




M-10A2A



M-10A2B



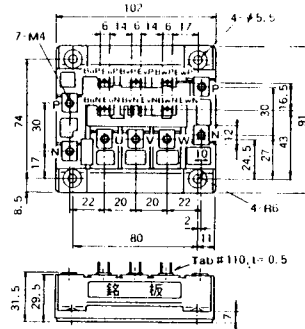
M-11A2A



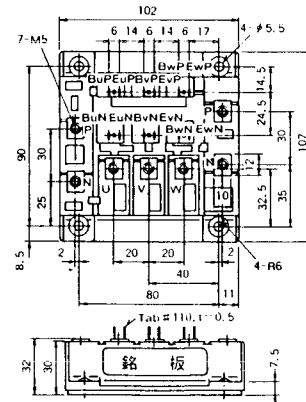
M-12A6A



M-12B6A



M-12B6B





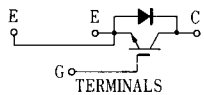
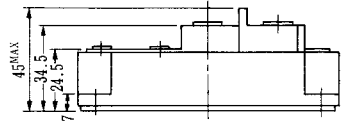
M-9D2B



M-10A2C



H-101



Weight :480g

### H-201



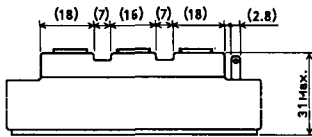
Weight: 200g

### H-202



Weight: 360g

### LF-J



### LF-K



