Unit: mm

TOSHIBA GTR Module Silicon N Channel IGBT

MG75J6ES50

High Power Switching Applications Motor Control Applications

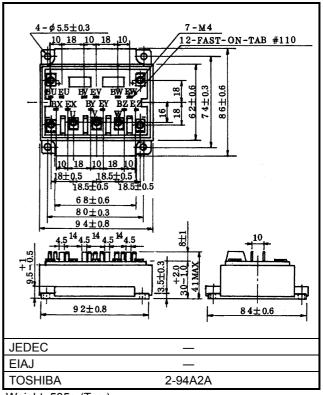
- The electrodes are isolated from case.
- High input impedance.
- 6 IGBTs built into 1 package.
- Enhancement-mode.
- High speed : $t_f = 0.30 \mu s$ (Max) (IC = 75A)

 $t_{rr} = 0.15 \mu s \text{ (Max) (IF} = 75 \text{A)}$

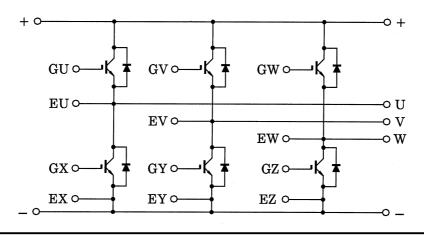
Low saturation voltage

Equivalent Circuit

: $V_{CE (sat)} = 2.70V (Max) (I_{C} = 75A)$



Weight: 505g (Typ.)



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damage to property.

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Maximum Ratings (Ta = 25°C)

Characteristic		Symbol	Rating	Unit	
Collector-emitter voltage		V _{CES}	600	V	
Gate-emitter voltage		V _{GES}	±20	V	
Collector current	DC	I _C	75	А	
	1ms	I _{CP}	150		
Forward current	DC	IF	75	А	
	1ms	I _{FM}	150		
Collector power dissipation (Tc = 25°C)		PC	390	W	
Junction temperature		Tj	150	°C	
Storage temperature range		T _{stg}	-40 ~ 125	°C	
Isolation voltage		V _{Isol}	2500 (AC 1 min.)	V	
Screw torque (Terminal / mounting)		_	2/3	N·m	

Electrical Characteristics (Ta = 25°C)

Characteristic		Symbol	Test Condition	Min	Тур.	Max	Unit	
Gate leakage current		I _{GES}	V _{GE} = ±20V, V _{CE} = 0	_	_	±500	nA	
Collector cut-off current		I _{CES}	V _{CE} = 600V, V _{GE} = 0	_	_	1.0	mA	
Gate-emitter cut-off voltage		V _{GE (off)}	I _C = 7.5mA, V _{CE} = 5V	5.0	7.0	8.0	V	
Collector-emitter saturation voltage		V _{CE (sat)}	I _C = 75A, V _{GE} = 15V	_	2.10	2.70	V	
Input capacitance		C _{ies}	V _{CE} = 10V, V _{GE} = 0, f = 1MHz	_	7100	_	pF	
Switching time	Turn-on delay time	t _{d (on)}	Inductive load $V_{CC}=300V$ $I_{C}=75A$ $V_{GE}=\pm15V$ $R_{G}=18\Omega$ (Note 1)	_	0.08	0.16	μs	
	Rise time	t _r		_	0.12	0.24		
	Turn-on time	t _{on}		_	0.40	0.80		
	Turn-off delay time	t _{d (off)}		_	0.20	0.40		
	Fall time	t _f		_	0.15	0.30		
	Turn-off time	t _{off}		_	0.50	1.00		
Forward voltage		V _F	I _F = 75A, V _{GE} = 0	_	2.10	2.80	V	
Reverse recovery time		t _{rr}	I _F = 75A, V _{GE} = -10V di / dt = 100A / μs	_	0.08	0.15	μs	
Thermal resistance		R _{th (j-c)}	Transistor	_	_	0.32	°C/W	
			Diode	_	_	0.69	C / VV	

Note 1: Switching time test circuit & timing chert

