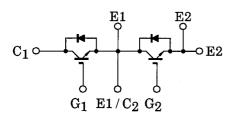
TOSHIBA GTR Module Silicon N Channel IGBT

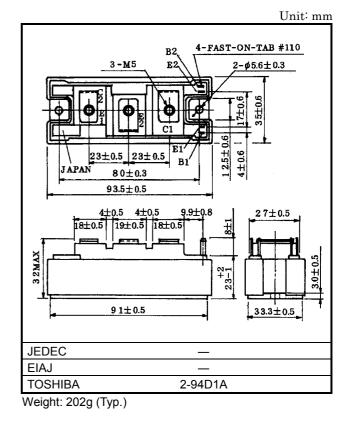
MG75J2YS50

High Power Switching Applications Motor Control Applications

- The electrodes are isolated from case.
- High input impedance.
- Includes a complete half bridge in one package.
- Enhancement-mode.
- High speed : $t_f = 0.30 \mu s(Max)$ (IC = 75A) $t_{rr} = 0.15 \mu s(Max)$ (IF = 75A)
- Low saturation voltage
 - : V_{CE} (sat) = 2.70V (Max) (I_C = 75A)

Equivalent Circuit





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	۱ _C	75	A	
	1ms	I _{CP}	150		
Forward current	DC	١ _F	75	A	
	1ms	I _{FM}	150		
Collector power dissipation ($T_c = 25^{\circ}C$)		P _C	390	W	
Junction temperature		Тj	150	°C	
Storage temperature range		T _{stg}	-40 ~ 125	°C	
Isolation voltage		V _{Isol}	2500 (AC 1 min.)	V	
Screw torque (Terminal / mounting)		—	3/3	N∙m	

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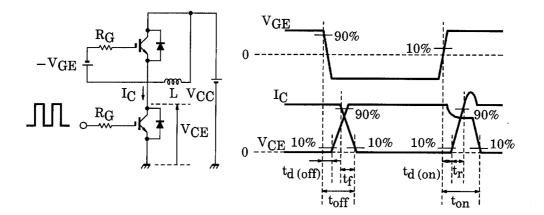
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Electrical Characteristics (Ta = 25°C)

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		ICES	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		Cies	V _{CE} = 10V, V _{GE} = 0, f = 1MHz	_	7100	_	pF
Switching time	Turn-on delay time	t _{d (on)}	Inductive load $V_{CC} = 300V$ $I_C = 75A$ $V_{GE} = \pm 15V$ $R_G = 18\Omega$ (Note 1)	_	0.08	0.16	μs
	Rise time	tr		—	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 _{of} f		—	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 stage	—	_	0.32	°C/W
			Diode stage	_	—	0.69	

Note 1: Switching time test circuit & timing chart

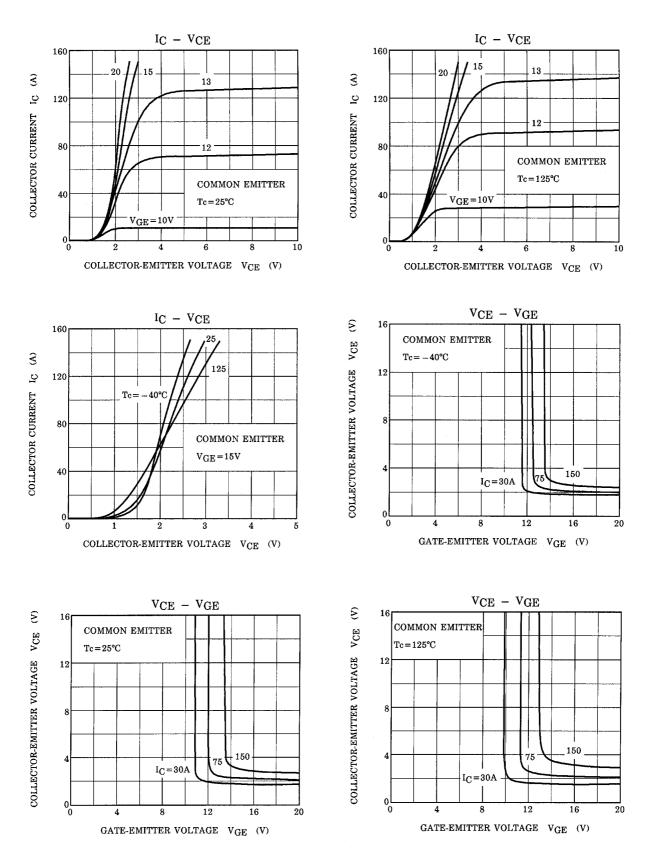


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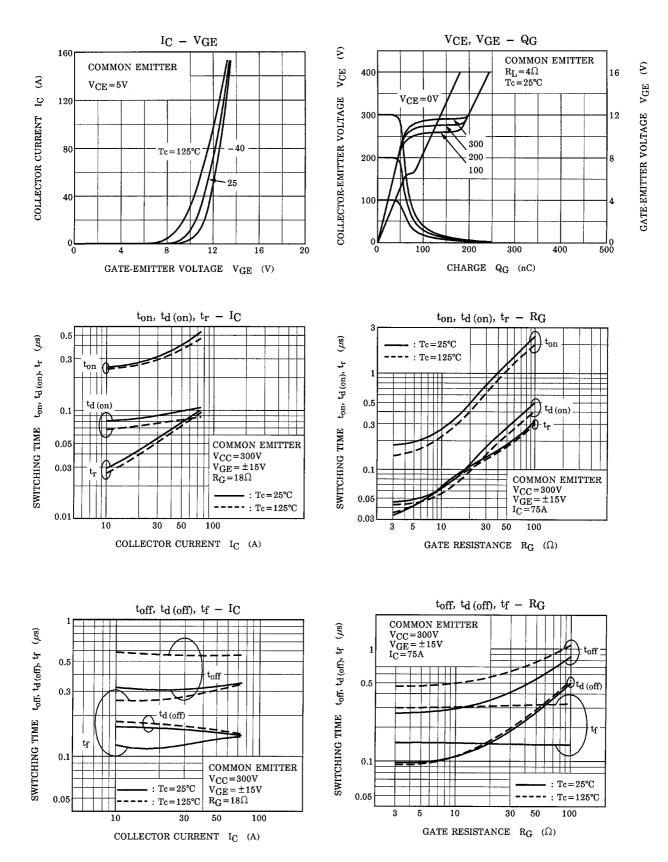
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