

TOSHIBA GTR MODULE SILICON N CHANNEL IGBT

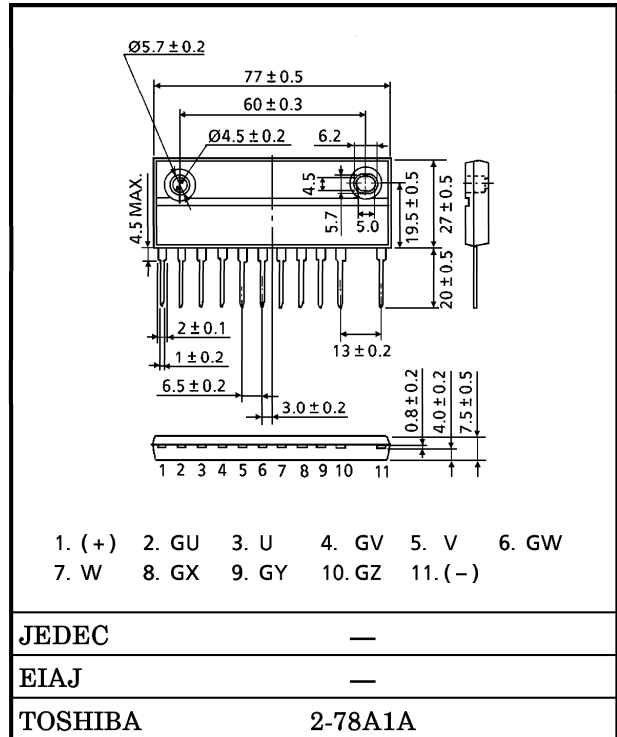
# MP6757

HIGH POWER SWITCHING APPLICATIONS

Unit in mm

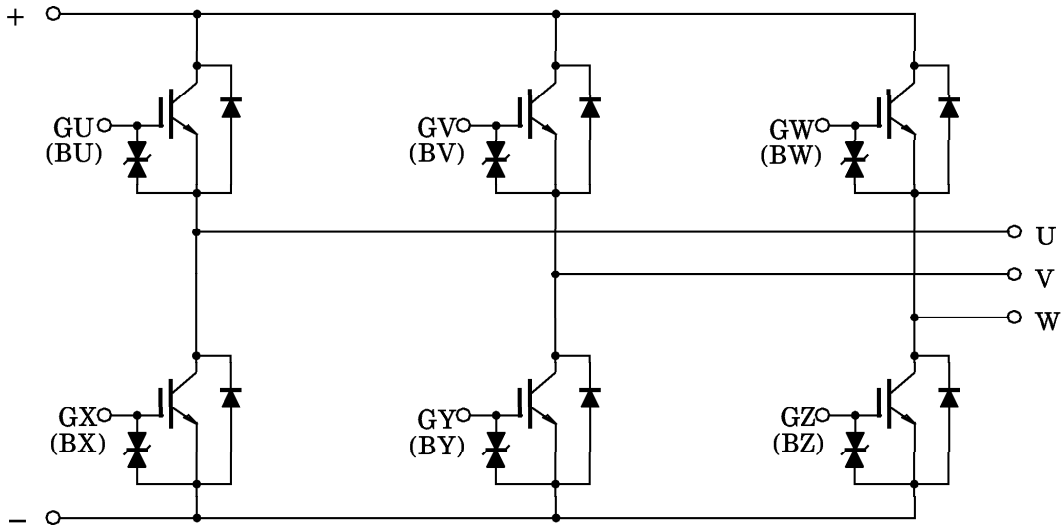
MOTOR CONTROL APPLICATIONS

- The electrodes are isolated from case.
- 6 IGBTs and 6 free wheeling diodes are built into 1 package.
- Enhancement-mode
- High speed :  $t_f = 0.35 \mu s$  (Max.) ( $I_C = 25 A$ )  
:  $t_{rr} = 0.15 \mu s$  (Max.) ( $I_F = 25 A$ )



Weight : 44 g

EQUIVALENT CIRCUIT



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MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Emitter Voltage		V <sub>CES</sub>	600	V
Gate-Emitter Voltage		V <sub>GES</sub>	±20	V
Collector Current	DC	I <sub>C</sub>	25	A
	1 ms	I <sub>CP</sub>	50	
Forward Current	DC	I <sub>F</sub>	25	A
	1 ms	I <sub>FM</sub>	50	
Collector Power Dissipation (T <sub>c</sub> = 25°C)		P <sub>C</sub>	72	W
Junction Temperature		T <sub>j</sub>	150	°C
Storage Temperature Range		T <sub>stg</sub>	-40 to 125	°C
Isolation Voltage		V <sub>Isol</sub>	2500 (AC 1 minute)	V
Screw Torque		—	1.5	N·m

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Gate Leakage Current		I <sub>GES</sub>	V <sub>GE</sub> = ±20 V, V <sub>CE</sub> = 0	—	—	±20	μA
Collector Cut-off Current		I <sub>CES</sub>	V <sub>CE</sub> = 600 V, V <sub>GE</sub> = 0	—	—	1.0	mA
Collector-Emitter Voltage		V <sub>CES</sub>	I <sub>C</sub> = 10 mA, V <sub>GE</sub> = 0	600	—	—	V
Gate-Emitter Cut-off Voltage		V <sub>GE (off)</sub>	V <sub>CE</sub> = 5 V, I <sub>C</sub> = 25 mA	5.6	—	8.6	V
Collector-Emitter Saturation Voltage		V <sub>CE (sat)</sub>	I <sub>C</sub> = 25 A, V <sub>GE</sub> = 15 V	—	2.6	3.1	V
Input Capacitance		C <sub>ies</sub>	V <sub>CE</sub> = 10 V, V <sub>GE</sub> = 0, f = 1 MHz	—	1200	—	pF
Switching Time	Rise Time	t <sub>r</sub>		—	0.3	0.6	μs
	Turn-on Time	t <sub>on</sub>		—	0.6	1.0	
	Fall Time	t <sub>f</sub>		—	0.2	0.35	
	Turn-off Time	t <sub>off</sub>		—	0.4	0.7	
Forward Voltage		V <sub>F</sub>	I <sub>F</sub> = 25 A, V <sub>GE</sub> = 0	—	2.1	3.2	V
Reverse Recovery Time		t <sub>rr</sub>	I <sub>F</sub> = 25 A, V <sub>GE</sub> = -10 V di / dt = 100 A / μs	—	0.08	0.15	μs
Thermal Resistance	R <sub>th (j-c)</sub>	Transistor		—	—	1.73	°C / W
		Diode		—	—	2.35	

