

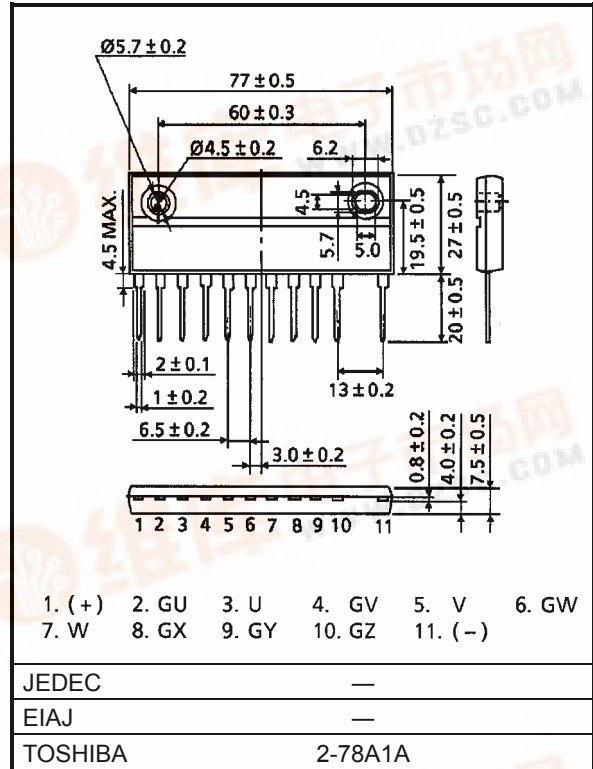
TOSHIBA GTR Module Silicon N Channel IGBT

# MP6754

High Power Switching Applications  
Motor Control Applications

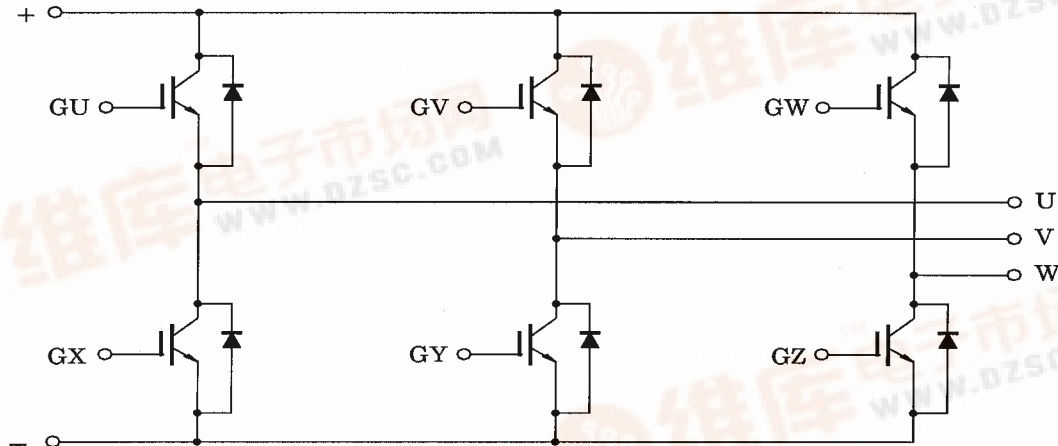
Unit: mm

- The electrodes are isolated from case.
- 6 IGBTs are built into 1 package.
- Enhancement-mode
- Low saturation voltage  
:  $V_{CE(sat)} = 4.0V$  (Max) ( $I_C = 10A$ )
- High speed :  $t_f = 0.35\mu s$  (Max) ( $I_C = 10A$ )  
 $t_{rr} = 0.15\mu s$  (Max) ( $I_F = 10A$ )



Weight: 44g (Typ.)

## 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>	10	A
	1ms	I <sub>CP</sub>	20	
Forward current	DC	I <sub>F</sub>	10	A
	1ms	I <sub>FM</sub>	20	
Collector power dissipation (T <sub>c</sub> = 25°C)		P <sub>C</sub>	40	W
Junction temperature		T <sub>j</sub>	150	°C
Storage temperature range		T <sub>stg</sub>	-40 ~ 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> = ± 20V, V <sub>CE</sub> = 0	—	—	± 500	nA
Collector cut-off current		I <sub>CES</sub>	V <sub>CE</sub> = 600V, V <sub>GE</sub> = 0	—	—	1.0	mA
Gate-emitter cut-off voltage		V <sub>GE (off)</sub>	I <sub>C</sub> = 10mA, V <sub>CE</sub> = 5V	6.0	—	9.0	V
Collector-emitter saturation voltage		V <sub>CE (sat)</sub>	I <sub>C</sub> = 10A, V <sub>GE</sub> = 15V	—	3.0	4.0	V
Input capacitance		C <sub>ies</sub>	V <sub>CE</sub> = 10V, V <sub>GE</sub> = 0, f = 1MHz	—	620	—	pF
Switching time	Rise time	t <sub>r</sub>		—	0.3	0.6	μs
	Turn-on time	t <sub>on</sub>		—	0.4	0.8	
	Fall time	t <sub>f</sub>		—	0.2	0.35	
	Turn-off time	t <sub>off</sub>		—	0.4	0.8	
Forward voltage		V <sub>F</sub>	I <sub>F</sub> = 10A, V <sub>GE</sub> = 0	—	1.7	2.5	V
Reverse recovery time		t <sub>rr</sub>	I <sub>F</sub> = 10A, V <sub>GE</sub> = -10V di / dt = 100A / μs	—	0.08	0.15	μs
Thermal resistance	R <sub>th (j-c)</sub>	Transistor		—	—	3.09	°C / W
		Diode		—	—	3.09	

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