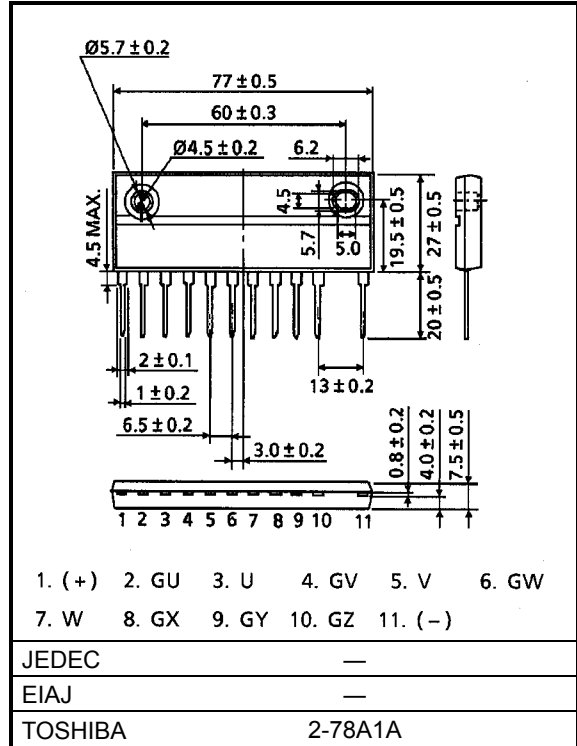


# MP6750

High Power Switching Applications  
 Motor Control Applications

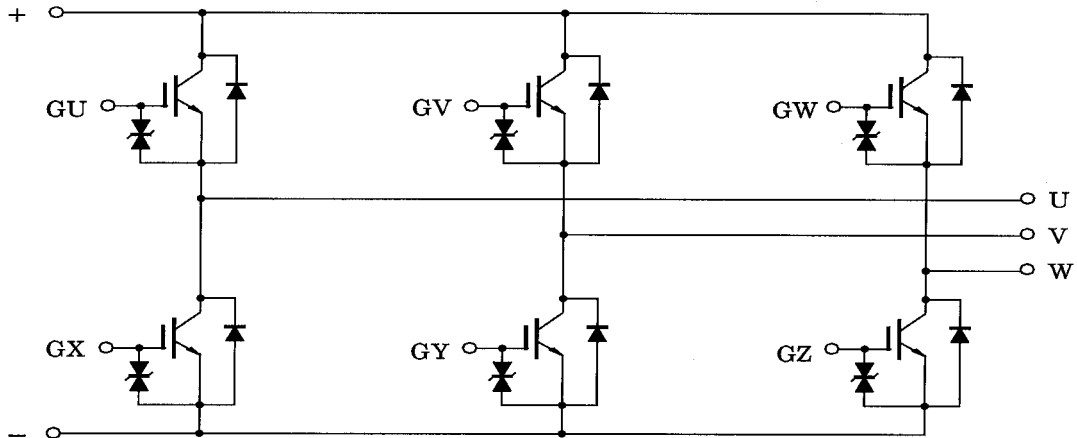
Unit: mm

- The electrodes are isolated from case.
- 6 IGBTs are built into 1 package.
- Enhancement-mode
- Low saturation voltage  
 $V_{CE(sat)} = 4.0V \text{ (Max)} (I_C = 15A)$
- High speed :  $t_f = 0.35\mu s \text{ (Max)} (I_C = 15A)$   
 $t_{rr} = 0.15\mu s \text{ (Max)} (I_F = 15A)$



Weight: 44g

## Equivalent Circuit



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 In developing your designs, please ensure that TOSHIBA products are used within specified operating ranges as set forth in the most recent TOSHIBA products specifications. Also, please keep in mind the precautions and conditions set forth in the "Handling Guide for Semiconductor Devices," or "TOSHIBA Semiconductor Reliability Handbook" etc..

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## Maximum Ratings (Ta = 25°C)

Characteristic		Symbol	Rating	Unit
Collector-emitter voltage		$V_{CES}$	600	V
Gate-emitter voltage		$V_{GES}$	$\pm 20$	V
Collector current	DC	$I_C$	15	A
	1ms	$I_{CP}$	30	
Forward current	DC	$I_F$	15	A
	1ms	$I_{FM}$	30	
Collector power dissipation (Tc = 25°C)		$P_C$	55	W
Junction temperature		$T_j$	150	°C
Storage temperature range		$T_{stg}$	-40 ~ 125	°C
Isolation voltage		$V_{isol}$	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		$I_{GES}$	$V_{GE} = \pm 20V, V_{CE} = 0$	—	—	$\pm 20$	$\mu A$
Collector cut-off current		$I_{CES}$	$V_{CE} = 600V, V_{GE} = 0$	—	—	1.0	mA
Gate-emitter cut-off voltage		$V_{GE (off)}$	$I_C = 15mA, V_{CE} = 5V$	3.0	—	6.0	V
Collector-emitter saturation voltage		$V_{CE (sat)}$	$I_C = 15A, V_{GE} = 15V$	—	3.0	4.0	V
Input capacitance		$C_{ies}$	$V_{CE} = 10V, V_{GE} = 0, f = 1MHz$	—	1000	—	pF
Switching time	Rise time	$t_r$		—	0.3	0.6	$\mu s$
	Turn-on time	$t_{on}$		—	0.4	0.8	
	Fall time	$t_f$		—	0.2	0.35	
	Turn-off time	$t_{off}$		—	0.5	1.0	
Forward voltage		$V_F$	$I_F = 15A, V_{GE} = 0$	—	1.7	2.5	V
Reverse recovery time		$t_{rr}$	$I_F = 15A, V_{GE} = -10V$ $di / dt = 50A / \mu s$	—	0.08	0.15	$\mu s$
Thermal resistance	$R_{th (j-c)}$	Transistor	—	—	2.27	°C / W	
		Diode	—	—	3.09		

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