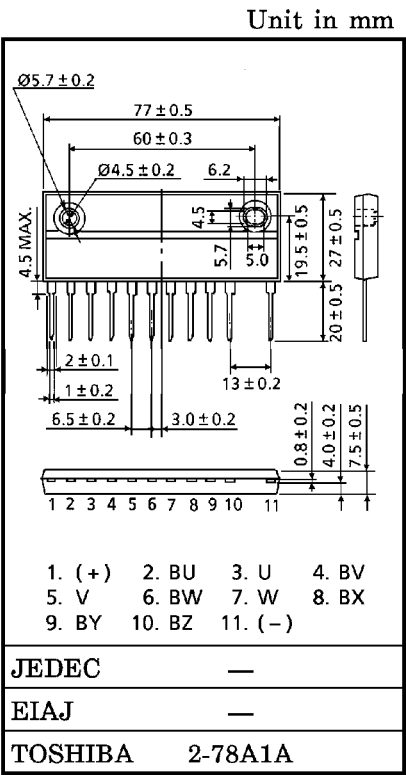


TOSHIBA POWER TRANSISTOR MODULE SILICON NPN TRIPLE DIFFUSED TYPE

MP6501A

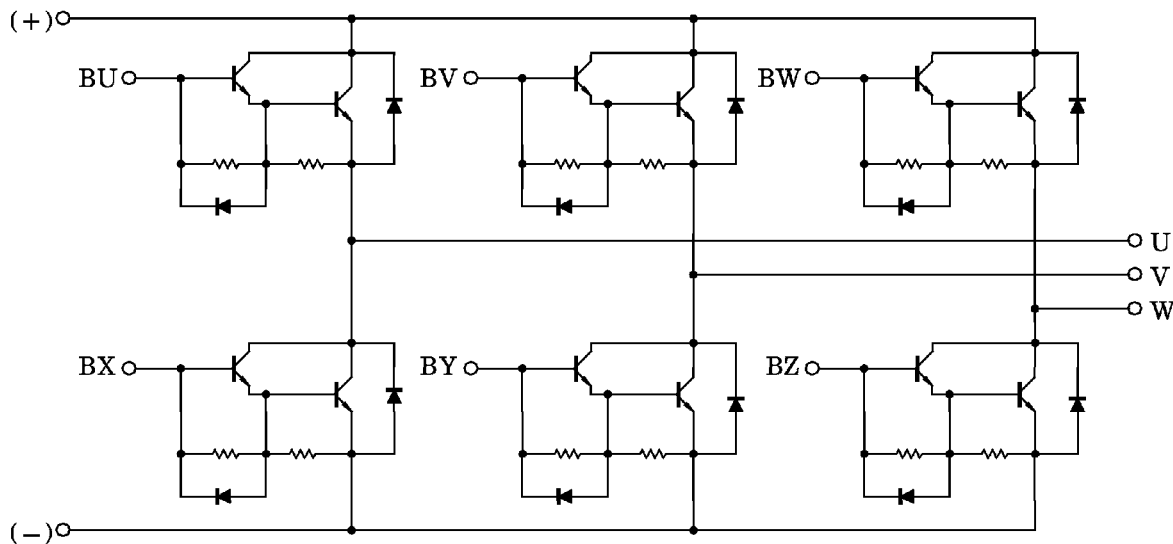
HIGH POWER SWITCHING APPLICATIONS  
MOTOR CONTROL APPLICATIONS

- The Electrodes are is Isolated from Case.
- 6 Darlington Transistor Built Into in 1 Package
- High Input Impedance
- High DC Current Gain  
:  $h_{FE}=100$  (Min.) ( $I_C=15A$ )
- Low Saturation Voltage  
:  $V_{CE(sat)}=2.1V$  (Max.) ( $I_C=15A$ )



Weight : 44g

EQUIVALENT CIRCUIT



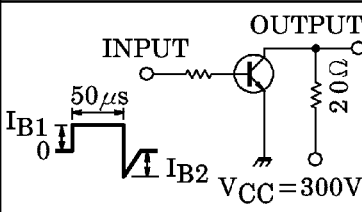
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## MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage		V <sub>CB0</sub>	500	V
Collector-Emitter Sustaining Voltage		V <sub>CEX</sub> (SUS)	500	V
		V <sub>CEO</sub> (SUS)	400	
Emitter-Base Voltage		V <sub>EBO</sub>	6	V
Collector Current	DC	I <sub>C</sub>	15	A
	1ms	I <sub>CP</sub>	30	
Forward Current	DC	I <sub>F</sub>	15	A
	1ms	I <sub>FM</sub>	30	
Base Current		I <sub>B</sub>	1.0	A
Collector Power Dissipation		P <sub>C</sub>	60	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 1Min.)	V
Screw Torque		—	1.5	N·m

## ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-Off Current		I <sub>CBO</sub>	V <sub>CB</sub> = 500V, I <sub>E</sub> = 0	—	—	1.0	mA
Emitter Cut-Off Current		I <sub>EBO</sub>	V <sub>BE</sub> = 6V, I <sub>C</sub> = 0	—	—	100	mA
Collector-Emitter Sustaining Voltage		V <sub>CEO</sub> (SUS)	I <sub>C</sub> = 0.5A, L = 40mH	400	—	—	V
DC Current Gain		h <sub>FE</sub>	V <sub>CE</sub> = 5V, I <sub>C</sub> = 15A	100	—	—	
Collector-Emitter Saturation Voltage		V <sub>CE</sub> (sat)	I <sub>C</sub> = 15A, I <sub>B</sub> = 0.4A	—	1.3	2.1	V
Base-Emitter Saturation Voltage		V <sub>BE</sub> (sat)	I <sub>C</sub> = 15A, I <sub>B</sub> = 0.4A	—	2.0	2.5	V
Switching Time	Turn-On Time	t <sub>on</sub>	 <p>INPUT</p> <p>OUTPUT</p> <p>50 μs</p> <p>I<sub>B1</sub></p> <p>I<sub>B2</sub></p> <p>V<sub>CC</sub> = 300V</p> <p>20 Ω</p>	—	0.6	1.0	μs
	Storage Time	t <sub>stg</sub>		—	5	12	
	Fall Time	t <sub>f</sub>		—	1.5	3.0	
Forward Voltage		V <sub>F</sub>	I <sub>F</sub> = 15A, I <sub>B</sub> = 0	—	1.5	2.0	V
Reverse Recovery Time		t <sub>rr</sub>	I <sub>F</sub> = 15A, V <sub>BE</sub> = −2A di / dt = 60A / μs	—	—	0.7	μs
Thermal Resistance		R <sub>th</sub> (j-c)	—	—	—	2.08	°C / W

