

MP4304

HIGH POWER SWITCHING APPLICATIONS.

HAMMER DRIVE, PULSE MOTOR DRIVE AND INDUCTIVE LOAD SWITCHING.

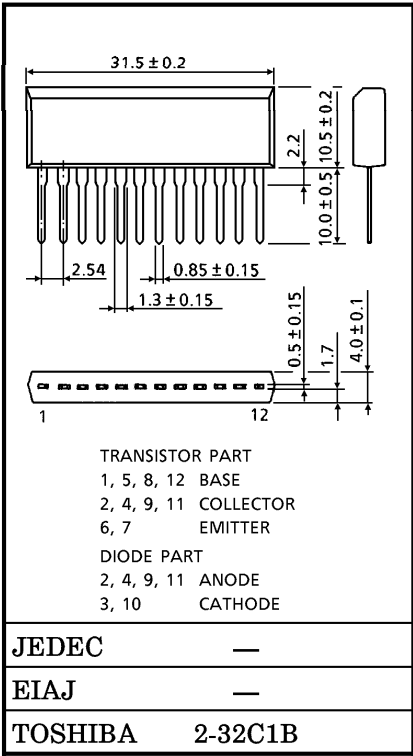
- Small Package by Full Molding (SIP 12 Pin)
- High Collector Power Dissipation (4 Devices Operation)
: $P_T=4.4W$ ($T_a=25^{\circ}C$)
- High Collector Current : I_C (DC)=3A (Max.)
- High DC Current Gain : $h_{FE}=600$ (Min.) ($V_{CE}=2V$, $I_C=1A$)

MAXIMUM RATINGS ($T_a = 25^{\circ}C$)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage		V_{CBO}	80	V
Collector-Emitter Voltage		V_{CEO}	80	V
Emitter-Base Voltage		V_{EBO}	7	V
Collector Current	DC	I_C	3	A
	Pulse	I_{CP}	5	
Continuous Base Current		I_B	0.5	A
Collector Power Dissipation (1 Device Operation)		P_C	2.2	W
Collector Power Dissipation (4 Devices Operation)		P_T	4.4	W
Junction Temperature		T_j	150	$^{\circ}C$
Storage Temperature Range		T_{stg}	-55~150	$^{\circ}C$

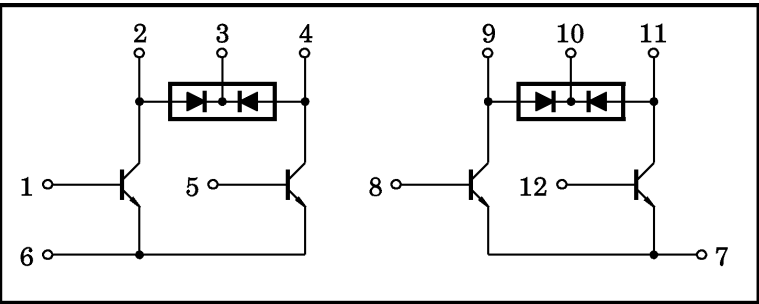
INDUSTRIAL APPLICATIONS

Unit in mm



Weight : 3.9g

ARRAY CONFIGURATION



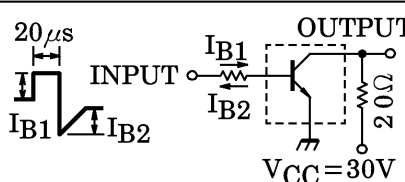
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THERMAL CHARACTERISTICS

CHARACTERISTIC	SYMBOL	MAX.	UNIT
Thermal Resistance of Junction to Ambient (4 Devices Operation, $T_a = 25^\circ\text{C}$)	$\Sigma R_{th(j-a)}$	28.4	$^\circ\text{C} / \text{W}$
Maximum Lead Temperature for Soldering Purposes (3.2mm from Case for 10s)	T_L	260	$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		I_{CBO}	$V_{CB}=80V, I_E=0$	—	—	10	μA
Emitter Cut-off Current		I_{EBO}	$V_{EB}=7V, I_C=0$	—	—	10	μA
Collector-Base Breakdown Voltage		$V_{(BR)CBO}$	$I_C=1mA, I_E=0$	80	—	—	V
Collector-Emitter Breakdown Voltage		$V_{(BR)CEO}$	$I_C=10mA, I_B=0$	80	—	—	V
DC Current Gain		$h_{FE}(1)$	$V_{CE}=2V, I_C=1A$	600	—	—	
		$h_{FE}(2)$	$V_{CE}=2V, I_C=2A$	150	—	—	
Saturation Voltage	Collector-Emitter	$V_{CE(sat)}$	$I_C=1.5A, I_B=15mA$	—	0.25	0.5	V
	Base-Emitter	$V_{BE(sat)}$	$I_C=1.5A, I_B=15mA$	—	—	1.2	
Transition Frequency		f_T	$V_{CE}=2V, I_C=0.1A$	—	85	—	MHz
Collector Output Capacitance		C_{ob}	$V_{CB}=10V, I_E=0, f=1MHz$	—	50	—	pF
Switching Time	Turn-on Time	t_{on}		—	0.4	—	μs
	Storage Time	t_{stg}		—	2.6	—	
	Fall Time	t_f		$I_{B1} = -I_{B2} = 15mA,$ $DUTY\ CYCLE \leq 1\%$	—	1.3	

FLYBACK-DIODE RATINGS AND CHARACTERISTICS ($T_a = 25^\circ\text{C}$)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Maximum Forward Current	I_{FM}	—	—	—	3	A
Reverse Current	I_R	$V_R = 80\text{V}$	—	—	0.4	μA
Reverse Voltage	V_R	$I_R = 100\mu\text{A}$	80	—	—	V
Forward Voltage	V_F	$I_F = 1\text{A}$	—	—	1.5	V

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