

MP4101

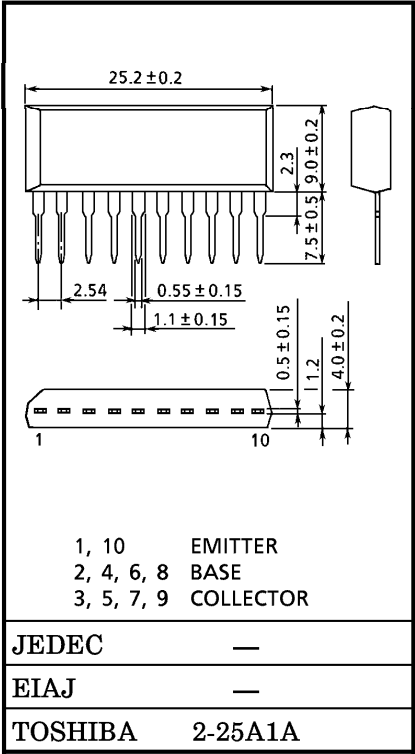
HIGH POWER SWITCHING APPLICATIONS.
HAMMER DRIVE, PULSE MOTOR DRIVE.
INDUCTIVE LOAD SWITCHING.

- Small Package by Full Molding (SIP 10 Pin)
- High Collector Power Dissipation (4 Devices Operation)
: $P_T=4W$ ($T_a=25^{\circ}C$)
- High Collector Current : I_C (DC) = 4A (Max.)
- High DC Current Gain : $h_{FE}=2000$ (Min.) ($V_{CE}=2V$, $I_C=1A$)
- Zener Diode Included Between Collector and Base.

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

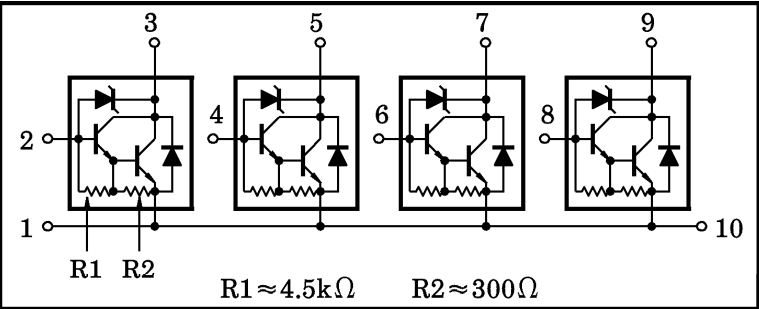
CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage		V_{CBO}	60 ± 10	V
Collector-Emitter Voltage		V_{CEO}	60 ± 10	V
Emitter-Base Voltage		V_{EBO}	6	V
Collector Current	DC	I_C	4	A
	Pulse	I_{CP}	6	
Continuous Base Current		I_B	0.5	A
Collector Power Dissipation (1 Device Operation)		P_C	2.0	W
Collector Power Dissipation (4 Devices Operation)		P_T	4.0	W
Junction Temperature		T_j	150	$^{\circ}C$
Storage Temperature Range		T_{stg}	$-55 \sim 150$	$^{\circ}C$

INDUSTRIAL APPLICATIONS
Unit in mm



Weight : 2.1g

ARRAY CONFIGURATION



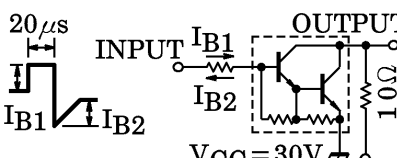
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THERMAL CHARACTERISTICS

CHARACTERISTIC	SYMBOL	MAX.	UNIT
Thermal Resistance of Junction to Ambient (4 Devices Operation, $T_a = 25^\circ\text{C}$)	$\Sigma R_{th(j-a)}$	31.3	$^\circ\text{C} / \text{W}$
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}	$V_{CB} = 45\text{V}$, $I_E = 0$	—	—	10	μA
Collector Cut-off Current		I_{CEO}	$V_{CE} = 45\text{V}$, $I_B = 0$	—	—	10	μA
Emitter Cut-off Current		I_{EBO}	$V_{EB} = 6\text{V}$, $I_C = 0$	0.6	—	20	mA
Collector-Base Breakdown Voltage		$V_{(BR)CBO}$	$I_C = 10\text{mA}$, $I_E = 0$	50	60	70	V
Collector-Emitter Breakdown Voltage		$V_{(BR)CEO}$	$I_C = 10\text{mA}$, $I_B = 0$	50	60	70	V
DC Current Gain		$h_{FE(1)}$	$V_{CE} = 2\text{V}$, $I_C = 1\text{A}$	2000	—	15000	
		$h_{FE(2)}$	$V_{CE} = 2\text{V}$, $I_C = 3\text{A}$	1000	—	—	
Saturation Voltage	Collector-Emitter	$V_{CE(sat)}$	$I_C = 3\text{A}$, $I_B = 10\text{mA}$	—	—	1.5	V
	Base-Emitter	$V_{BE(sat)}$	$I_C = 3\text{A}$, $I_B = 10\text{mA}$	—	—	2.0	
Transition Frequency		f_T	$V_{CE} = 2\text{V}$, $I_C = 0.5\text{A}$	—	60	—	MHz
Collector Output Capacitance		C_{ob}	$V_{CB} = 10\text{V}$, $I_E = 0\text{A}$, $f = 1\text{MHz}$	—	30	—	pF
Switching Time	Turn-on Time	t_{on}	 $I_{B1} = -I_{B2} = 10\text{mA}$, DUTY CYCLE $\leq 1\%$	—	0.2	—	μs
	Storage Time	t_{stg}		—	3.0	—	
	Fall Time	t_f		—	0.5	—	

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