

MP4006

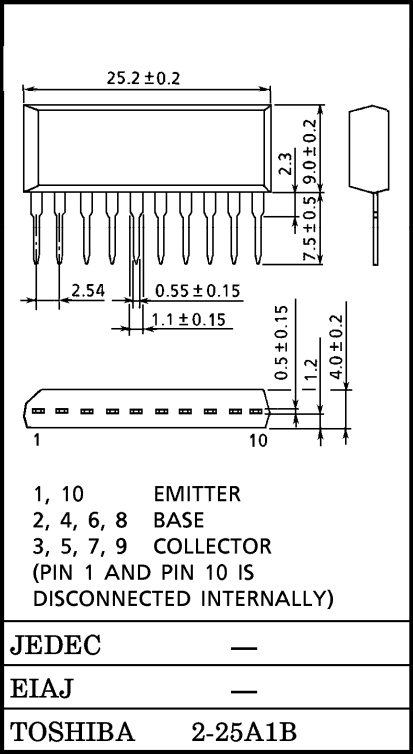
HIGH POWER SWITCHING APPLICATIONS.
HAMMER DRIVE, PULSE MOTOR DRIVE AND INDUCTIVE
LOAD SWITCHING.

- Small Package by Full Molding (SIP 10 Pin)
- High Collector Power Dissipation (4 Devices Operation)
: I_C (DC) = $\pm 2A$ (Max.)
- High DC Current Gain : $h_{FE} = 2000$ (Min.)
($V_{CE} = \pm 2V$, $I_C = \pm 1A$)

MAXIMUM RATINGS (Ta = 25°C)

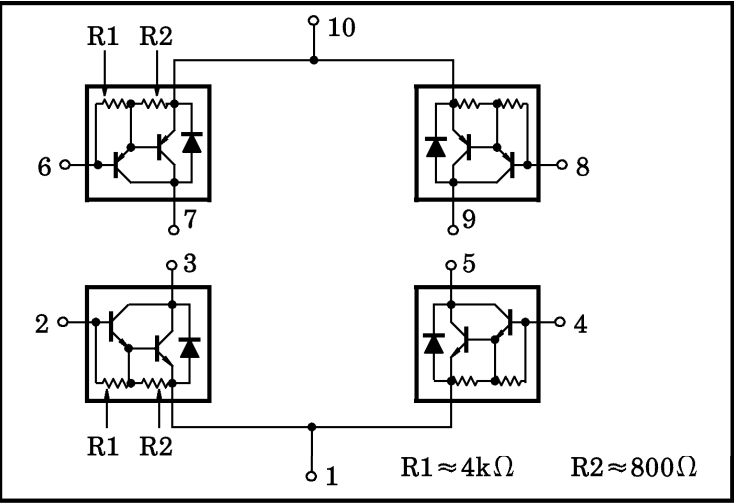
CHARACTERISTIC		SYMBOL	RATING		UNIT
			NPN	PNP	
Collector-Base Voltage		V_{CBO}	80	-80	V
Collector-Emitter Voltage		V_{CEO}	80	-80	V
Emitter-Base Voltage		V_{EBO}	8	-8	V
Collector Current	DC	I_C	2	-2	A
	Pulse	I_{CP}	3	-3	
Continuous Base Current		I_B	0.5	-0.5	A
Collector Power Dissipation (1 Device Operation)		P_C	2.0		W
Collector Power Dissipation (4 Devices Operation)		P_T	4.0		W
Junction Temperature		T_j	150		°C
Storage Temperature Range		T_{stg}	-55~150		°C

INDUSTRIAL APPLICATIONS
Unit in mm



Weight : 2.1g

ARRAY CONFIGURATION



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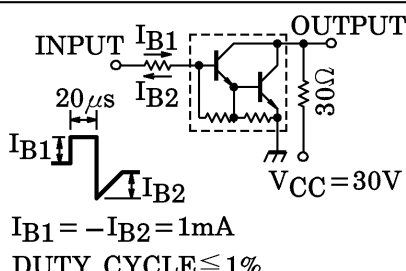
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THERMAL CHARACTERISTICS

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	$^\circ\text{C}$

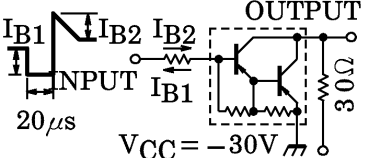
ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$) (NPN TRANSISTOR)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		I_{CBO}	$V_{CB}=80\text{V}, I_E=0$	—	—	10	μA
Collector Cut-off Current		I_{CEO}	$V_{CE}=80\text{V}, I_B=0$	—	—	10	μA
Emitter Cut-off Current		I_{EBO}	$V_{EB}=8\text{V}, I_C=0$	0.8	—	4.0	mA
Collector-Base Breakdown Voltage		$V_{(BR)CBO}$	$I_C=1\text{mA}, I_E=0$	80	—	—	V
Collector-Emitter Breakdown Voltage		$V_{(BR)CEO}$	$I_C=10\text{mA}, I_B=0$	80	—	—	V
DC Current Gain		h_{FE}	$V_{CE}=2\text{V}, I_C=1\text{A}$	2000	—	—	
Saturation Voltage	Collector-Emitter	$V_{CE(sat)}$	$I_C=1\text{A}, I_B=1\text{mA}$	—	—	1.5	V
	Base-Emitter	$V_{BE(sat)}$	$I_C=1\text{A}, I_B=1\text{mA}$	—	—	2.0	
Transition Frequency		f_T	$V_{CE}=2\text{V}, I_C=0.5\text{A}$	—	100	—	MHz
Collector Output Capacitance		C_{ob}	$V_{CB}=10\text{V}, I_E=0, f=1\text{MHz}$	—	20	—	pF
Switching Time	Turn-on Time	t_{on}		—	0.4	—	μs
	Storage Time	t_{stg}		—	4.0	—	
	Fall Time	t_f		$I_{B1} = -I_{B2} = 1\text{mA}$ $\text{DUTY CYCLE} \leq 1\%$	—	0.6	

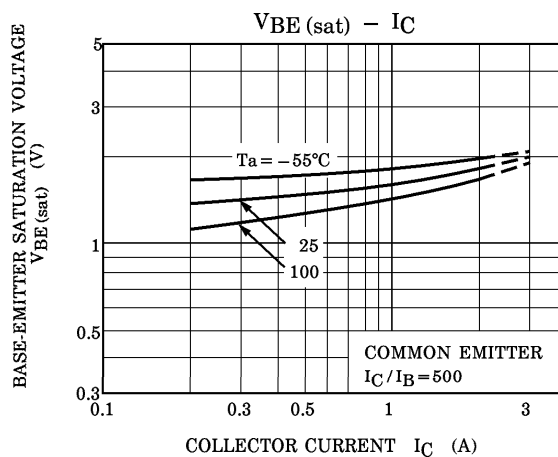
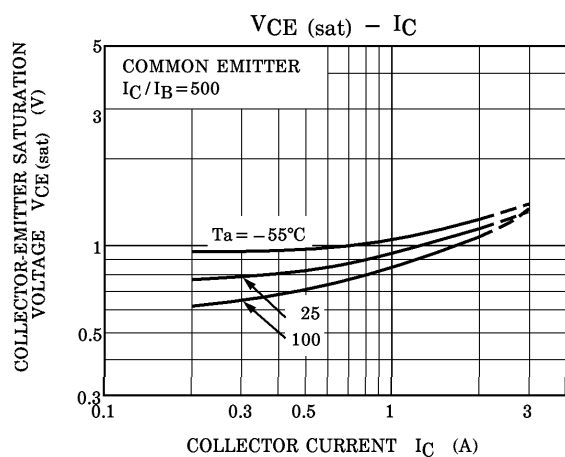
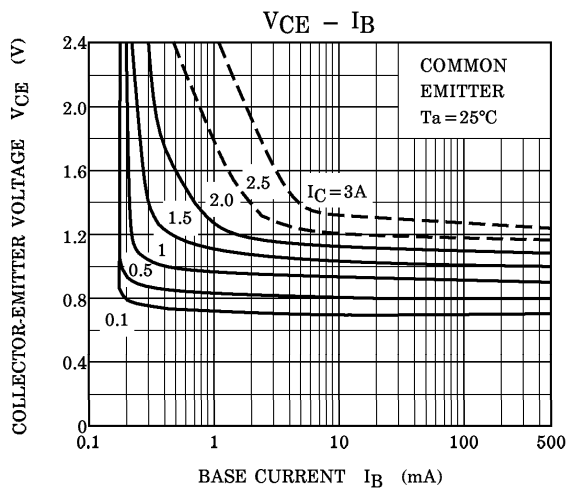
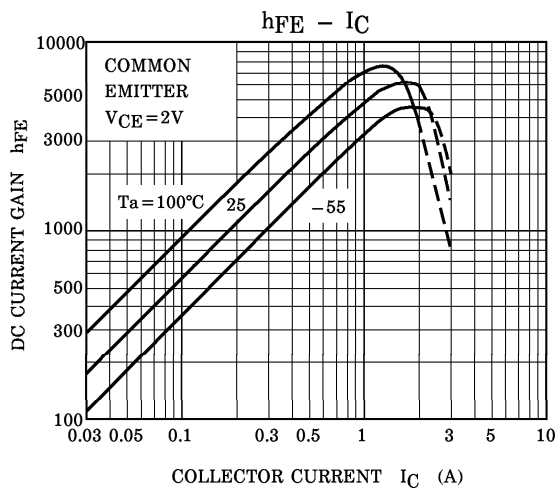
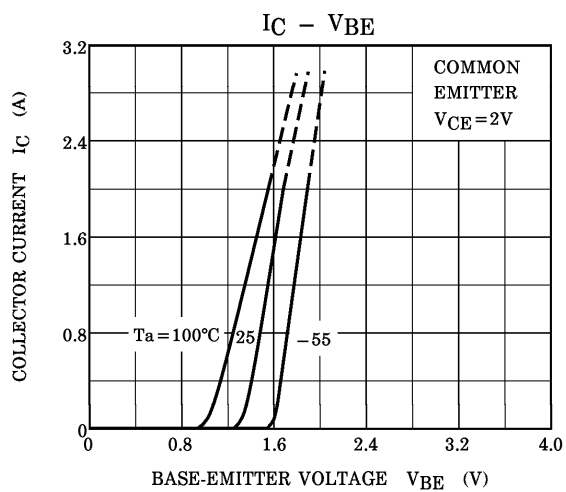
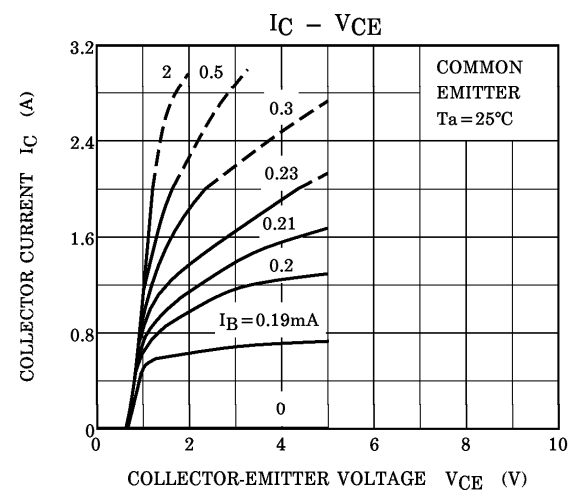
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ELECTRICAL CHARACTERISTICS (Ta = 25°C) (PNP TRANSISTOR)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		I_{CBO}	$V_{CB} = -80V, I_E = 0$	—	—	-10	μA
Collector Cut-off Current		I_{CEO}	$V_{CE} = -80V, I_B = 0$	—	—	-10	μA
Emitter Cut-off Current		I_{EBO}	$V_{EB} = -8V, I_C = 0$	-0.8	—	-4.0	mA
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}	$V_{CE} = -2V, I_C = -1A$	2000	—	—	
Saturation Voltage	Collector-Emitter	$V_{CE(sat)}$	$I_C = -1A, I_B = -1mA$	—	—	-1.5	V
	Base-Emitter	$V_{BE(sat)}$	$I_C = -1A, I_B = -1mA$	—	—	-2.0	
Transition Frequency		f_T	$V_{CE} = -2V, I_C = -0.5A$	—	50	—	MHz
Collector Output Capacitance		C_{ob}	$V_{CB} = -10V, I_E = 0, f = 1MHz$	—	30	—	pF
Switching Time	Turn-on Time	t_{on}	 $V_{CC} = -30V$ $-I_{B1} = I_{B2} = 1mA$, DUTY CYCLE $\leq 1\%$	—	0.4	—	μs
	Storage Time	t_{stg}		—	2.0	—	
	Fall Time	t_f		—	0.4	—	

(NPN TRANSISTOR)



(PNP TRANSISTOR)

