

TOSHIBA TRANSISTOR SILICON NPN TRIPLE DIFFUSED TYPE (DARLINGTON POWER)

2SD1409A

IGNITER APPLICATIONS

HIGH VOLTAGE SWITCHING APPLICATIONS

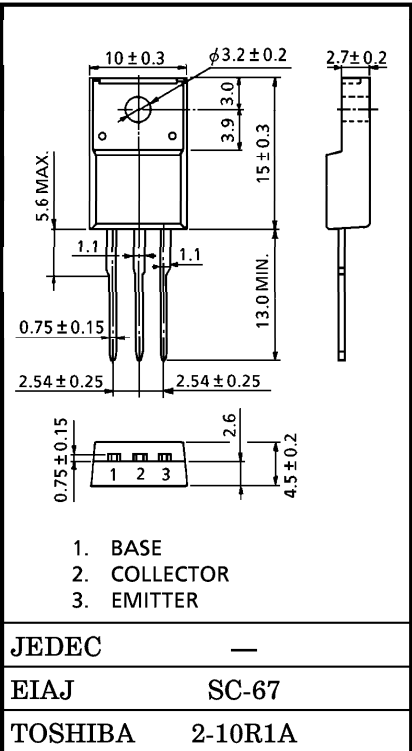
INDUSTRIAL APPLICATIONS

Unit in mm

- High DC Current Gain : $h_{FE} = 600$ (Min.)
($V_{CE} = 2\text{ V}$, $I_C = 2\text{ A}$)
- Monolithic Construction with Built-In Base-Emitter Shunt Resistor.

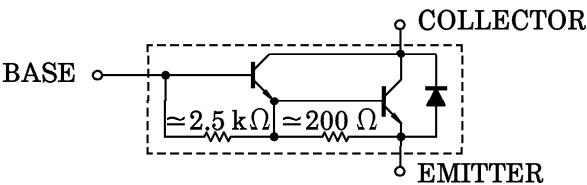
MAXIMUM RATINGS ($T_a = 25^\circ\text{C}$)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage		V_{CBO}	600	V
Collector-Emitter Voltage		V_{CEO}	400	V
Emitter-Base Voltage		V_{EBO}	5	V
Collector Current		I_C	6	A
Base Current		I_B	1	A
Collector Power Dissipation	$T_a = 25^\circ\text{C}$	P_C	2.0	W
	$T_c = 25^\circ\text{C}$		25	
Junction Temperature		T_j	150	$^\circ\text{C}$
Storage Temperature Range		T_{stg}	$-55\sim 150$	$^\circ\text{C}$



Weight : 1.7 g

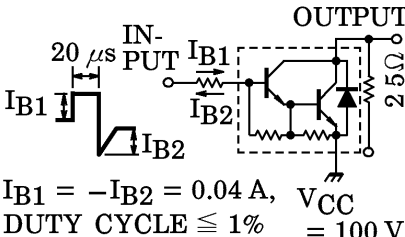
EQUIVALENT CIRCUIT



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ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		ICBO	V _{CB} = 600 V, I _E = 0	—	—	0.5	mA
Emitter Cut-off Current		IEBO	V _{EB} = 5 V, I _C = 0	—	—	3	mA
Collector-Emitter Breakdown Voltage		V _(BR) CEO	I _C = 10 mA, I _B = 0	400	—	—	V
DC Current Gain		h _{FE} (1)	V _{CE} = 2 V, I _C = 2 A	600	—	—	
		h _{FE} (2)	V _{CE} = 2 V, I _C = 4 A	100	—	—	
Collector-Emitter Saturation Voltage		V _{CE} (sat)	I _C = 4 A, I _B = 0.04 A	—	—	2.0	V
Base-Emitter Saturation Voltage		V _{BE} (sat)	I _C = 4 A, I _B = 0.04 A	—	—	2.5	V
Emitter-Collector Forward Voltage		V _{ECF}	I _E = 4 A, I _B = 0	—	—	3.0	V
Collector Output Capacitance		C _{ob}	V _{CB} = 50 V, I _E = 0, f = 1 MHz	—	35	—	pF
Switching Time	Turn-on Time	t _{on}	 I _{B1} = -I _{B2} = 0.04 A, V _{CC} = 100 V DUTY CYCLE ≤ 1%	—	1	—	μs
	Storage Time	t _{stg}		—	8	—	
	Fall Time	t _f		—	5	—	

