

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL TYPE

2SD2127

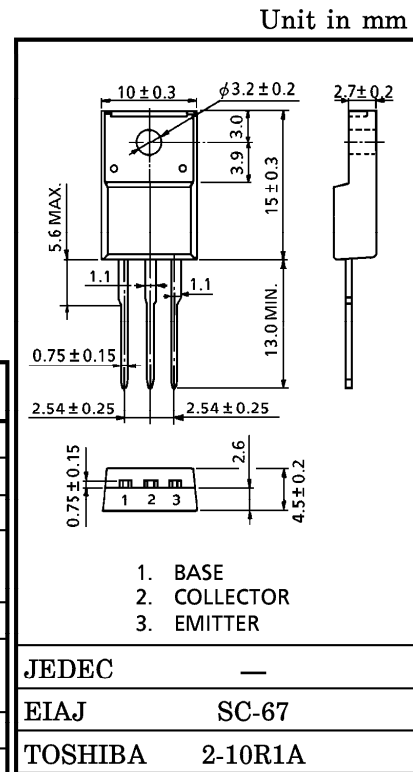
SWITCHING APPLICATIONS

LAMP, SOLENOID DRIVE APPLICATIONS.

- High DC Current Gain : $h_{FE} = 500 \sim 1500$
- Low Collector Saturation Voltage : $V_{CE(sat)} = 0.3V$ (Max.)
- Zener Diode Included Between Collector and Base.

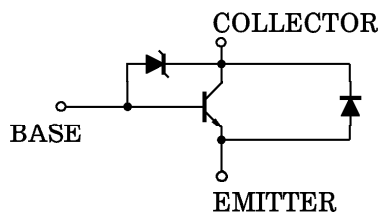
MAXIMUM RATINGS ($T_a = 25^\circ C$)

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}	7	V
Collector Current	DC	I_C	3
	Pulse	I_{CP}	5
Base Current	I_B	1	A
Collector Power Dissipation	$T_a = 25^\circ C$	P_C	2.0
	$T_c = 25^\circ C$		25
Junction Temperature	T_j	150	$^\circ C$
Storage Temperature Range	T_{stg}	$-55 \sim 150$	$^\circ C$



Weight : 1.7g (Typ.)

EQUIVALENT CIRCUIT



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ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT	
Collector Cut-off Current	I_{CBO}	$V_{CB} = 45V, I_E = 0$	—	—	10	μA	
Emitter Cut-off Current	I_{EBO}	$V_{EB} = 7V, I_C = 0$	—	—	10	μA	
Collector-Emitter Breakdown Voltage	$V_{(BR) CEO}$	$I_C = 50mA, I_B = 0$	50	60	70	V	
DC Current Gain	$h_{FE} (1)$	$V_{CE} = 1V, I_C = 0.5A$	500	—	1500		
	$h_{FE} (2)$	$V_{CE} = 1V, I_C = 1A$	150	—	—		
Collector-Emitter Saturation Voltage	$V_{CE} (sat)$	$I_C = 1A, I_B = 10mA$	—	—	0.3	V	
Base-Emitter Saturation Voltage	$V_{BE} (sat)$	$I_C = 1A, I_B = 10mA$	—	—	1.2	V	
Emitter-Collector Forward Voltage	V_{ECF}	$I_E = 1A, I_B = 0$	—	—	2.0	V	
Transition Frequency	f_T	$V_{CE} = 5V, I_C = 0.5A$	—	140	—	MHz	
Collector Output Capacitance	C_{ob}	$V_{CB} = 10V, I_E = 0, f = 1MHz$	—	30	—	pF	
Switching Time	Turn-on Time	t_{on}		—	0.6	—	μs
	Storage Time	t_{stg}		—	1.6	—	
	Fall Time	t_f		$I_{B1} = -I_{B2} = 10mA,$ $DUTY CYCLE \leq 1\%$ $V_{CC} \cong 30V$	—	0.4	

