

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL TYPE

2SD2127

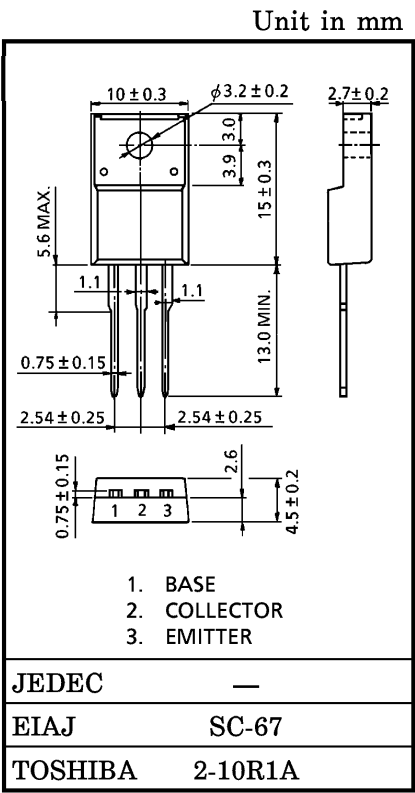
SWITCHING APPLICATIONS

LAMP, SOLENOID DRIVE APPLICATIONS.

- High DC Current Gain : $h_{FE}=500\sim1500$
- Low Collector Saturation Voltage
: $V_{CE(sat)}=0.3V$ (Max.)
- Zener Diode Included Between Collector and Base.

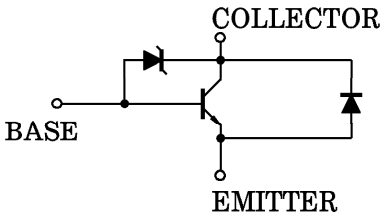
MAXIMUM RATINGS (Ta = 25°C)

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	A
	Pulse	I_{CP}	5	
Base Current		I_B	1	A
Collector Power Dissipation	Ta = 25°C	P_C	2.0	W
	Tc = 25°C		25	
Junction Temperature		T_j	150	°C
Storage Temperature Range		T_{stg}	-55~150	°C

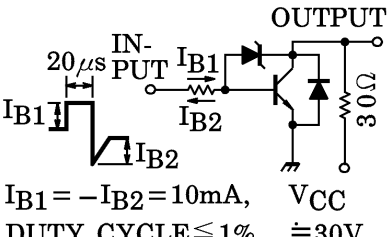


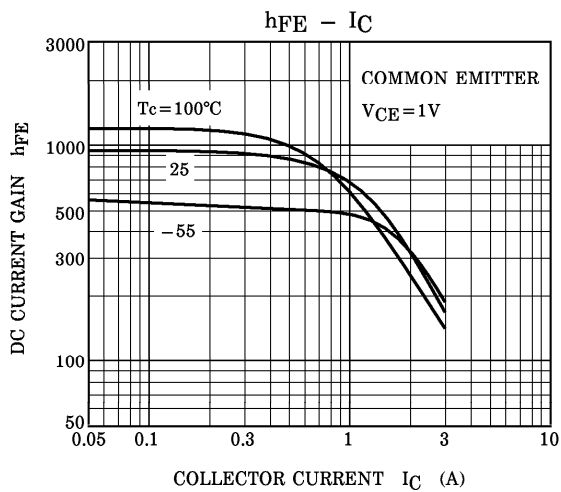
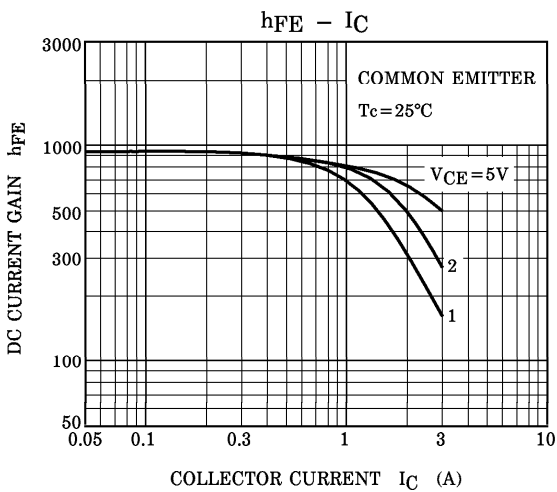
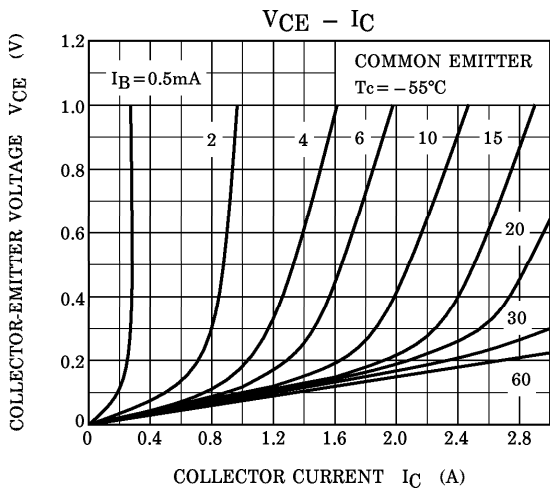
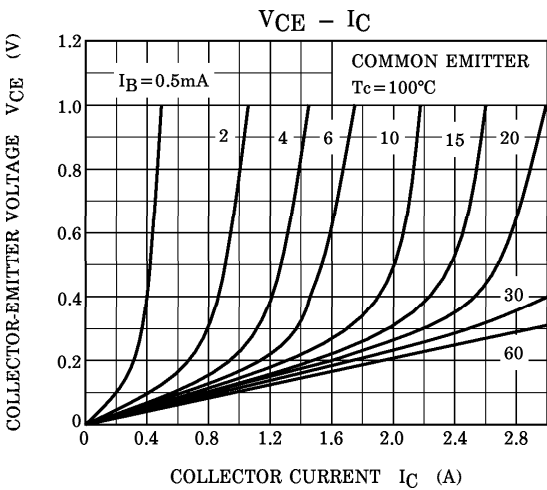
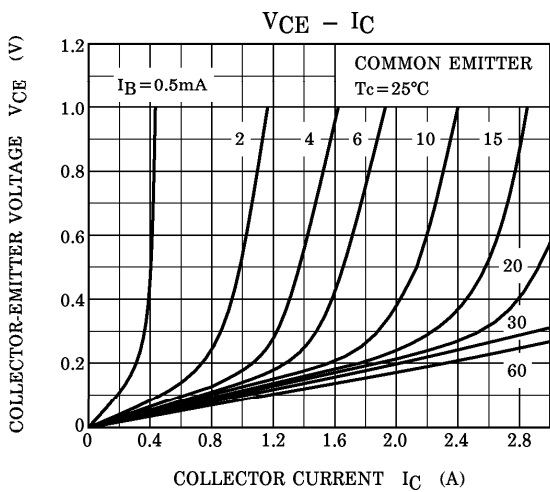
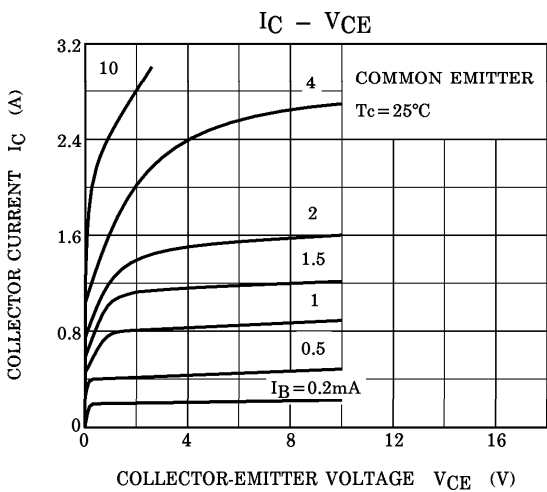
Weight : 1.7g (Typ.)

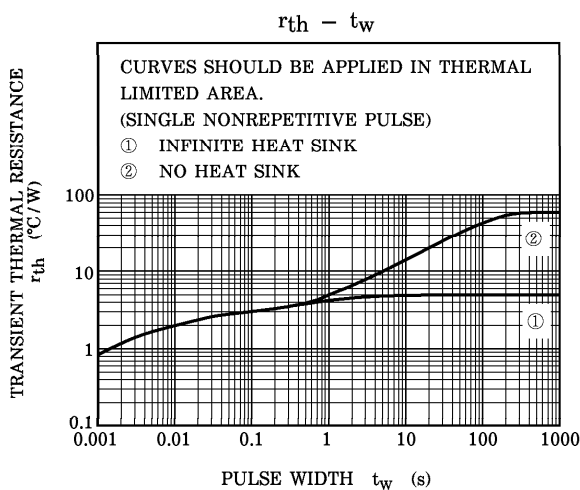
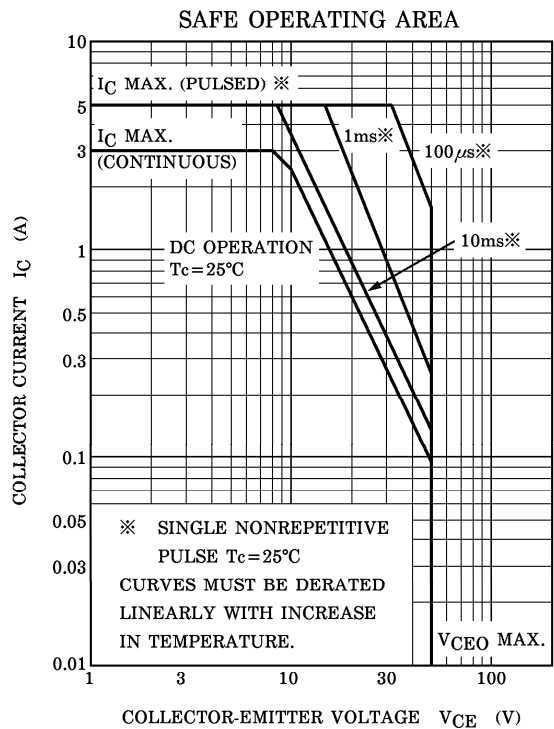
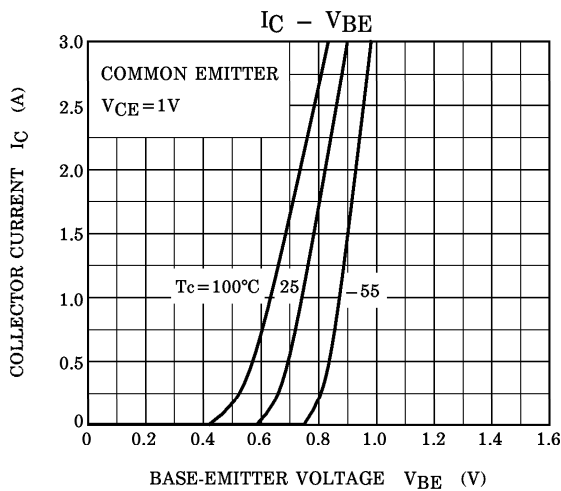
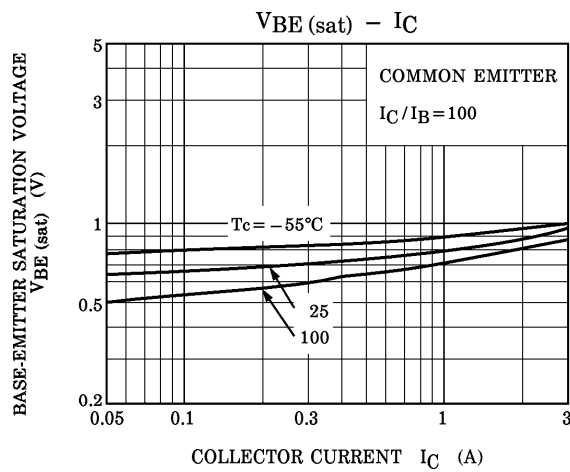
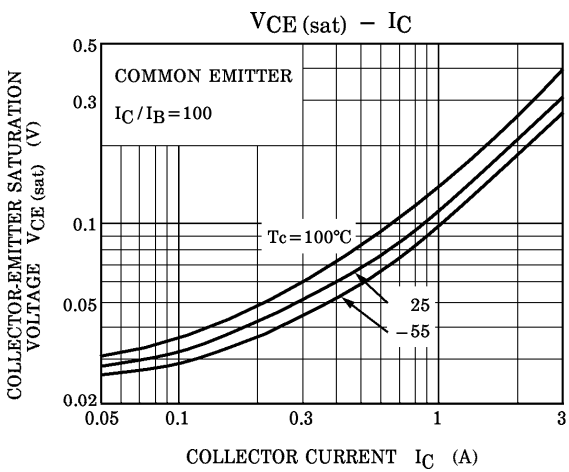
EQUIVALENT CIRCUIT



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}	 $I_{B1} = -I_{B2} = 10mA$, DUTY CYCLE $\leq 1\%$ $V_{CC} \cong 30V$	—	0.6	—	μs
	Storage Time	t_{stg}		—	1.6	—	
	Fall Time	t_f		—	0.4	—	





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