

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL TYPE

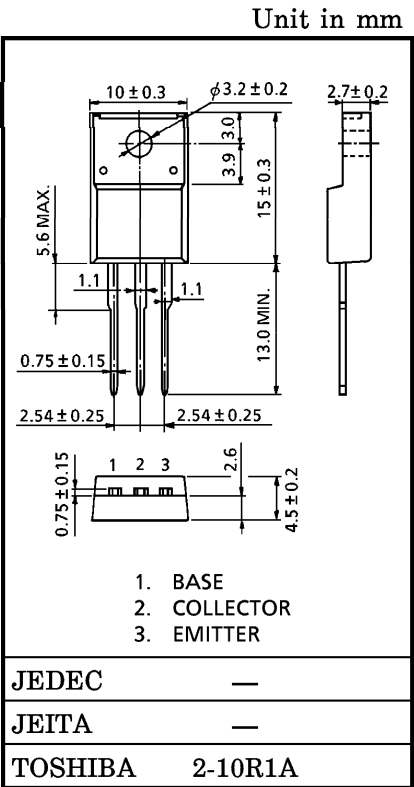
2SD1947A

HIGH CURRENT SWITCHING APPLICATIONS
LAMP, SOLENOID DRIVE APPLICATIONS

- High DC Current Gain : $h_{FE}=500\sim1500$ ($I_C=1A$)
- Low Collector Saturation Voltage
: $V_{CE(sat)}=0.3V$ (Max.) ($I_C=5A$)

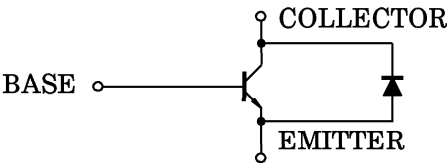
MAXIMUM RATINGS ($T_c = 25^{\circ}C$)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage		V_{CBO}	100	V
Collector-Emitter Voltage		V_{CEO}	100	V
Emitter-Base Voltage		V_{EBO}	7	V
Collector Current	DC	I_C	10	A
	Pulse	I_{CP}	15	
Base Current		I_B	2	A
Collector Power Dissipation	$T_a = 25^{\circ}C$	P_C	2.0	W
	$T_c = 25^{\circ}C$		40	
Junction Temperature		T_j	150	$^{\circ}C$
Storage Temperature Range		T_{stg}	$-55\sim150$	$^{\circ}C$

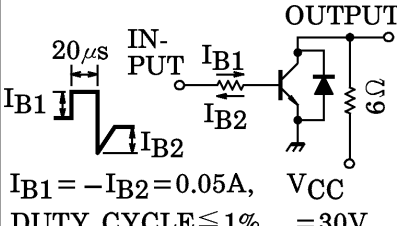


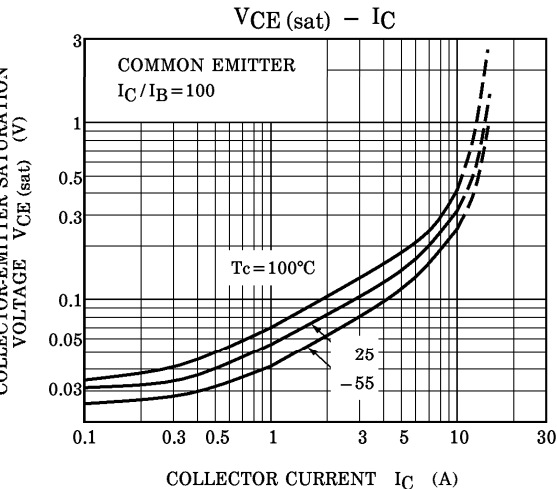
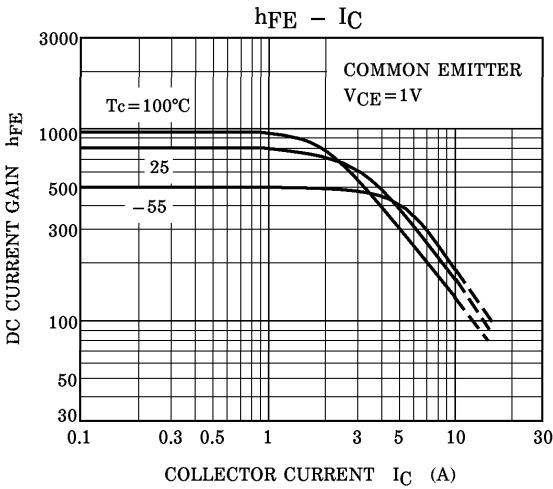
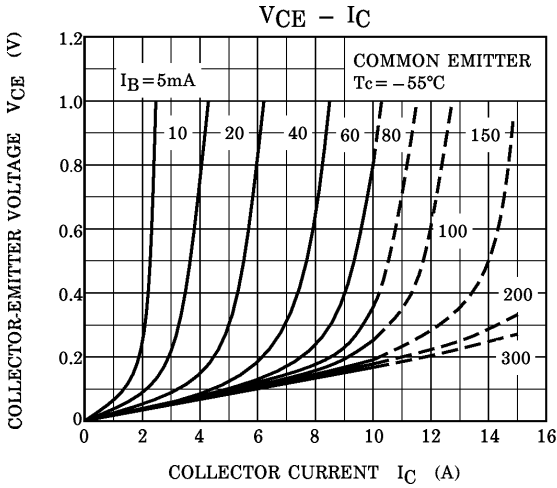
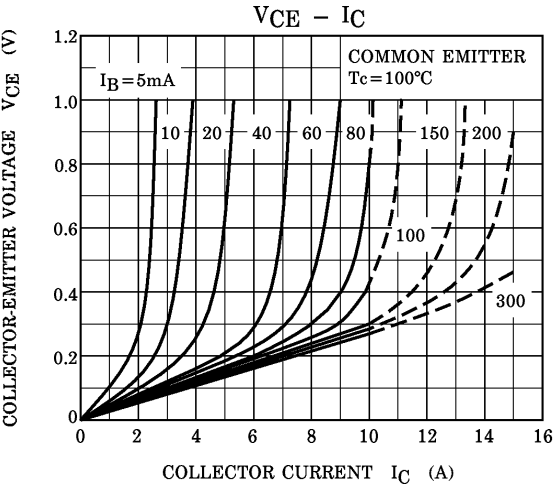
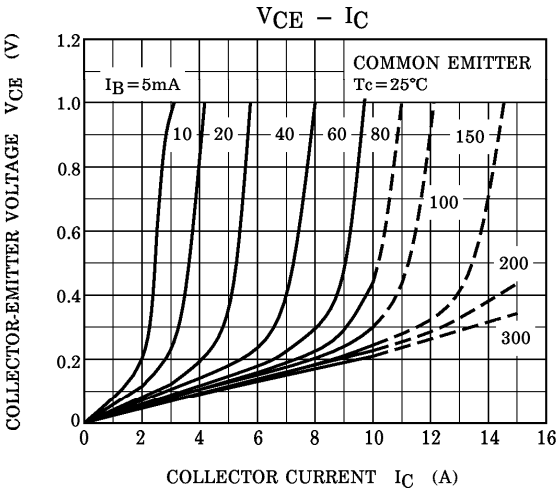
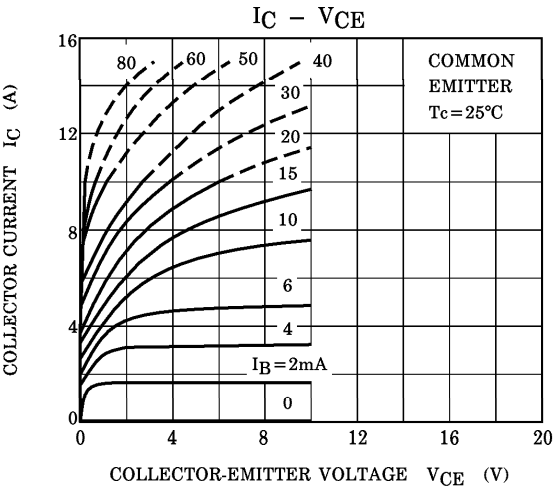
Weight : 1.7 g (Typ.)

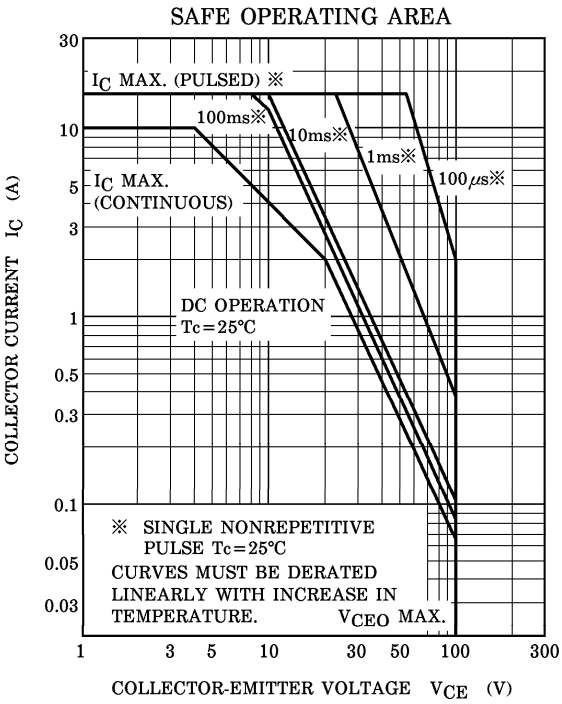
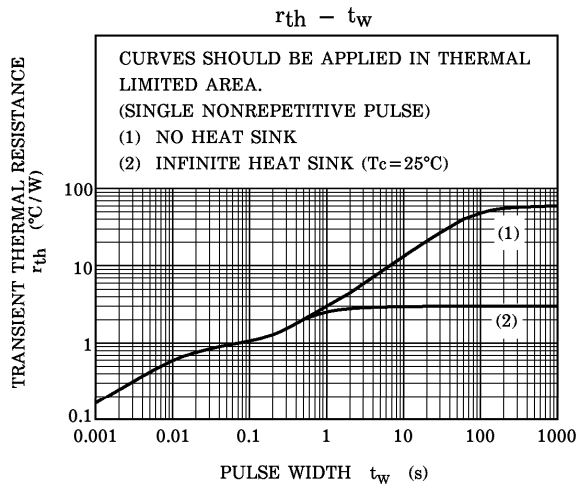
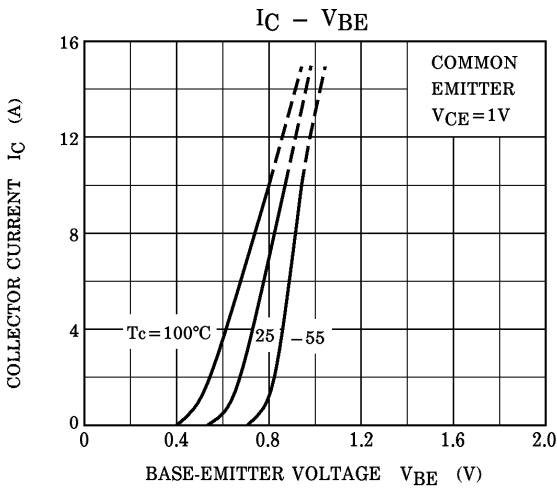
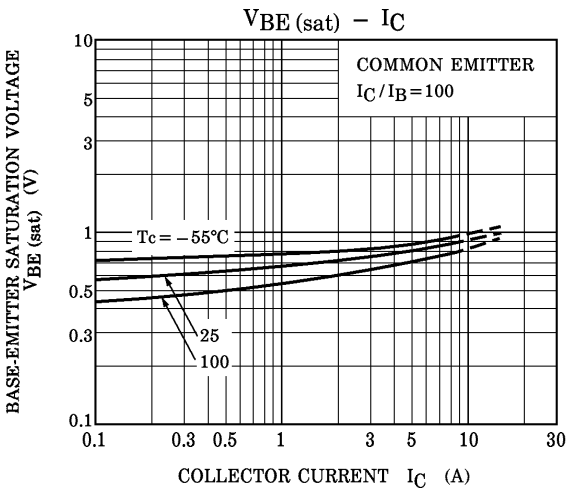
EQUIVALENT CIRCUIT



ELECTRICAL CHARACTERISTICS (T_c = 25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		I _{CBO}	V _{CB} = 100V, 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	100	—	—	V
DC Current Gain		h _{FE} (1)	V _{CE} = 1V, I _C = 1A	500	—	1500	
		h _{FE} (2)	V _{CE} = 1V, I _C = 5A	150	—	—	
Collector-Emitter Saturation Voltage		V _{CE} (sat)	I _C = 5A, I _B = 0.05A	—	—	0.3	V
Base-Emitter Saturation Voltage		V _{BE} (sat)	I _C = 5A, I _B = 0.05A	—	—	1.2	V
Collector-Emitter Forward Voltage		V _{ECF}	I _E = 5A, I _B = 0	—	—	2.0	V
Transition Frequency		f _T	V _{CE} = 5V, I _C = 1A	—	70	—	MHz
Collector Output Capacitance		C _{ob}	V _{CB} = 10V, I _E = 0, f = 1MHz	—	160	—	pF
Switching Time	Turn-on Time	t _{on}	 20μs IN-PUT I_{B1} I_{B2} OUTPUT 75Ω 6V V_{CC} = 30V DUTY CYCLE ≤ 1%	—	0.5	—	μs
	Storage Time	t _{stg}		—	6.0	—	
	Fall Time	t _f		—	1.0	—	





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