TOSHIBA TRANSISTOR SILICON NPN TRIPLE DIFFUSED TYPE (DARLINGTON)

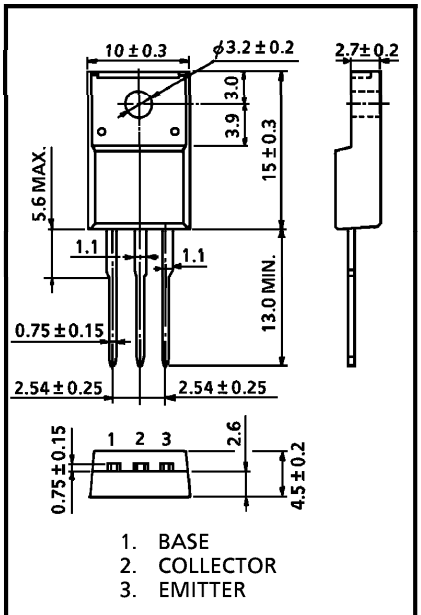
2SD2604

HIGH POWER SWITCHING APPLICATIONS

HAMMER DRIVE, PULSE MOTOR DRIVE APPLICATIONS

- High DC Current Gain : h_{FE} = 2000 (Min.)
- Low Saturation Voltage : $V_{CE\ (sat)}$ = 1.5V (Max.)

Unit in mm



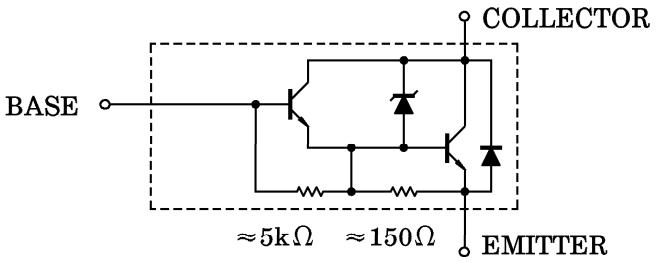
JEDEC	—
JEITA	SC-67
TOSHIBA	2-10R1A

Weight : 1.7 g (Typ.)

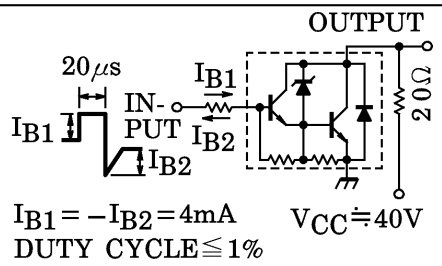
MAXIMUM RATINGS (Tc = 25°C)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage		V_{CBO}	95	V
Collector-Emitter Voltage		V_{CEO}	110 ± 15	V
Emitter-Base Voltage		V_{EBO}	5	V
Collector Current	DC	I_C	5	A
	Pulse	I_{CP}	10	A
Base Current		I_B	0.7	A
Collector Power Dissipation	Ta = 25°C	P_C	2.0	W
	Tc = 25°C		20	
Junction Temperature		T_j	150	°C
Storage Temperature Range		T_{stg}	−55~150	°C

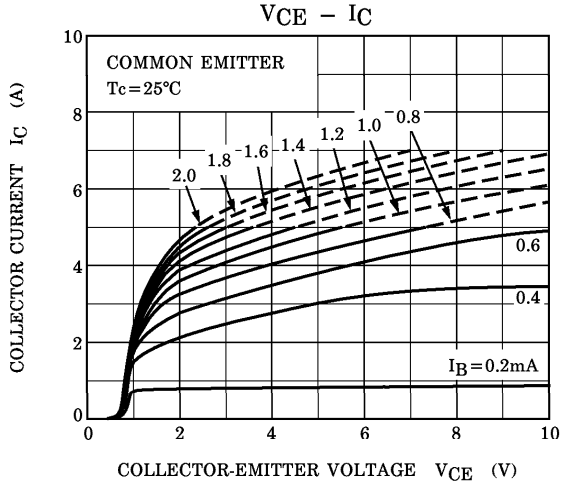
EQUIVALENT CIRCUIT



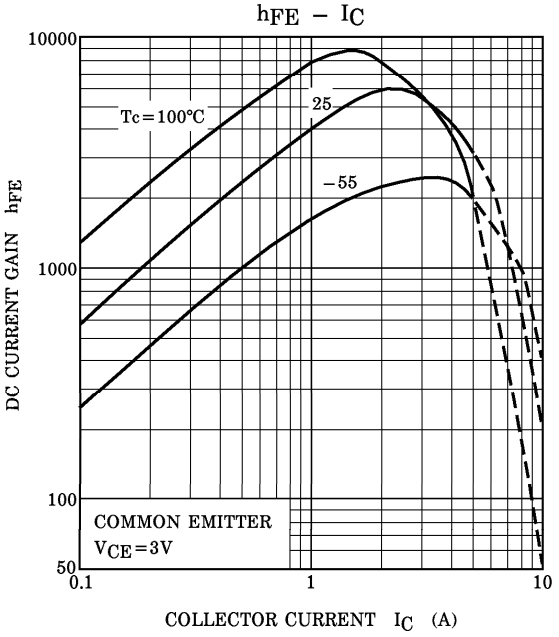
ELECTRICAL CHARACTERISTICS (Tc = 25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		I_{CBO}	V_{CB} = 90V, I_E = 0	—	—	100	μA
Emitter Cut-off Current		I_{EBO}	V_{EB} = 6V, I_C = 0	0.75	—	3.0	μA
Collector-Emitter Breakdown Voltage		$V_{(BR)CEO}$	I_C = 10mA, I_B = 0	95	110	125	V
DC Current Gain		h_{FE} (1)	V_{CE} = 3V, I_C = 2A	2000	—	15000	
		h_{FE} (2)	V_{CE} = 3V, I_C = 5A	1000	—	—	
Collector-Emitter Saturation Voltage		$V_{CE\ (sat)}$	I_C = 2A, I_B = 4mA	—	0.9	1.5	V
Base-Emitter Saturation Voltage		$V_{BE\ (sat)}$	I_C = 2A, I_B = 4mA	—	1.5	2.5	V
Switching Time	Turn-on Time	t_{on}	 $I_{B1} = -I_{B2}$ = 4mA $V_{CC} \fallingdotseq$ 40V DUTY CYCLE ≦ 1%	—	0.5	—	μs
	Storage Time	t_{stg}		—	5.0	—	
	Fall Time	t_f		—	0.7	—	

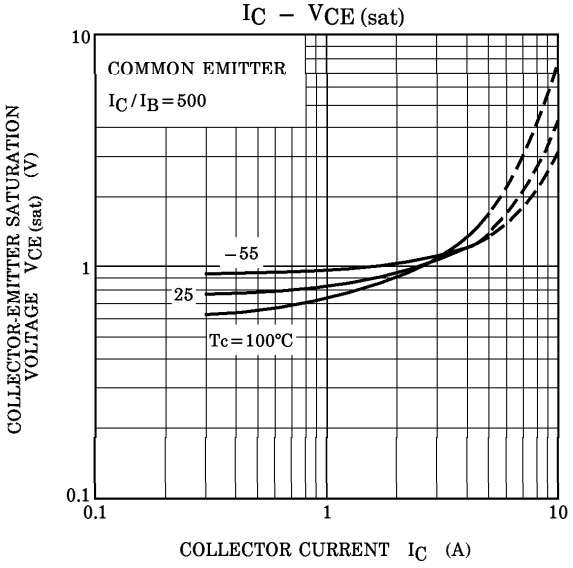
V_{CE} – I_C



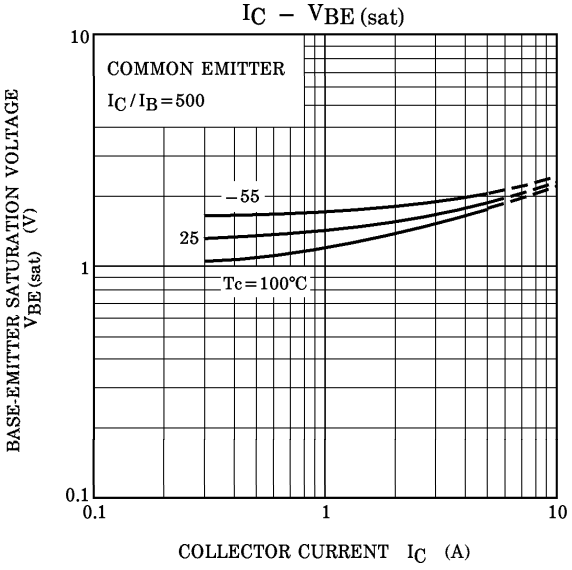
h_{FE} – I_C



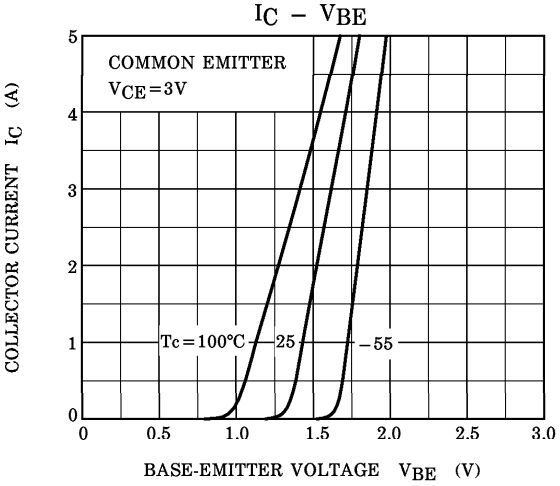
I_C – $V_{CE\,(sat)}$



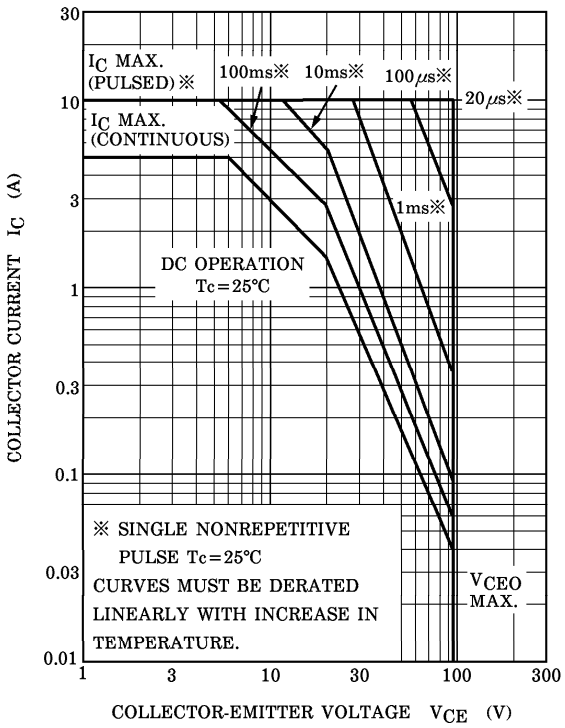
I_C – $V_{BE\,(sat)}$



I_C – V_{BE}



SAFE OPERATING AREA



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