

TOSHIBA TRANSISTOR SILICON NPN TRIPLE DIFFUSED TYPE (DARLINGTON)

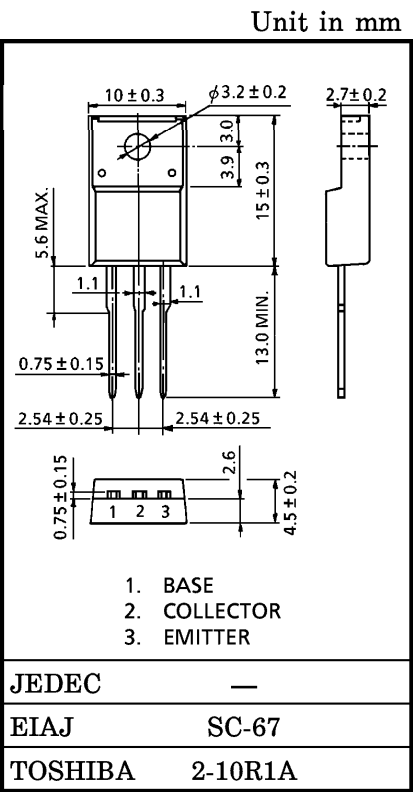
2SD2129

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.)

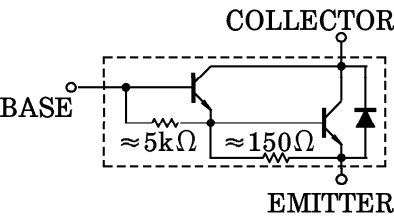
MAXIMUM RATINGS (Ta = 25°C)

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	$I_C$	3	A
	Pulse	$I_{CP}$	5	
Base Current		$I_B$	0.5	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

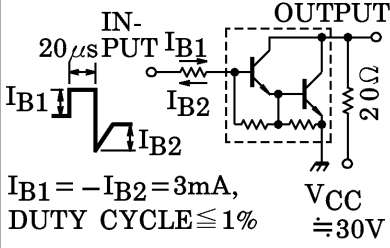


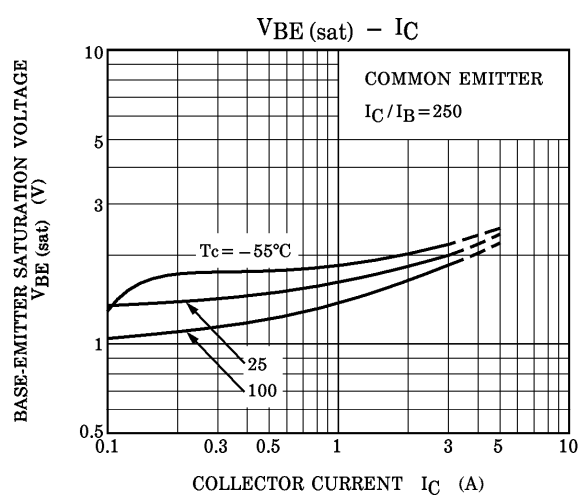
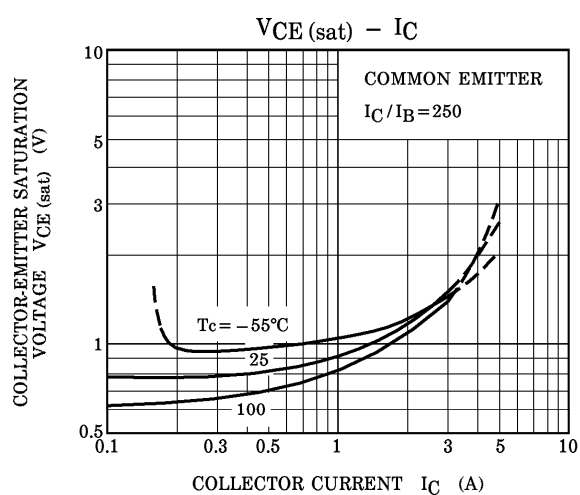
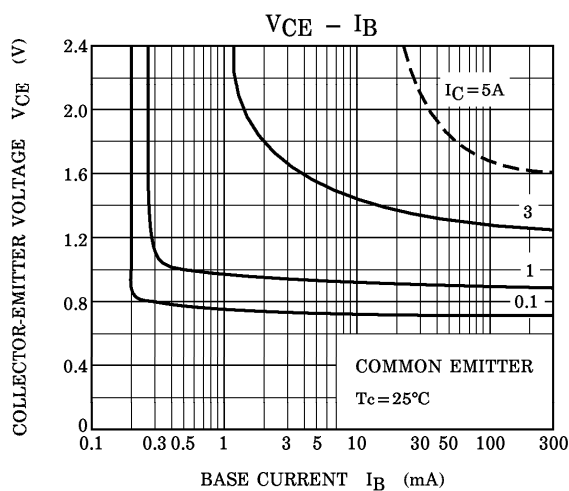
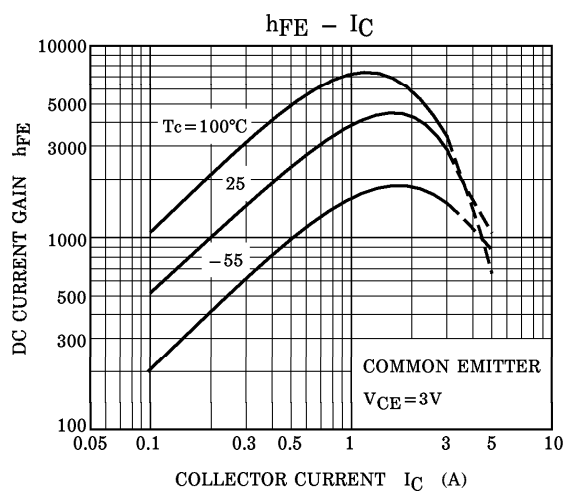
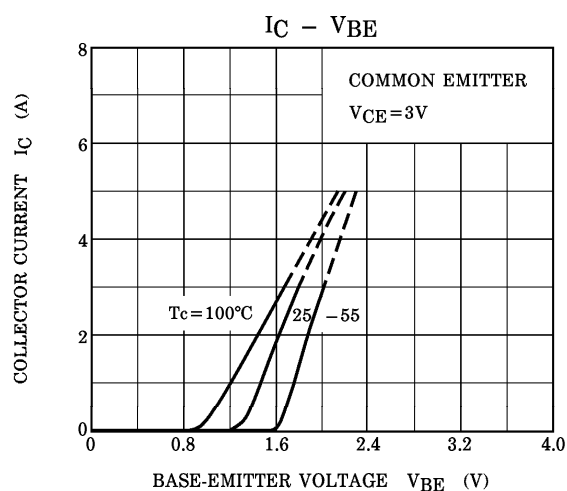
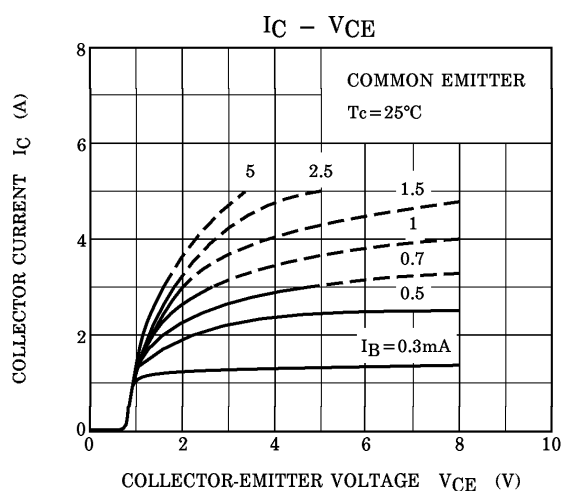
Weight : 1.7g (Typ.)

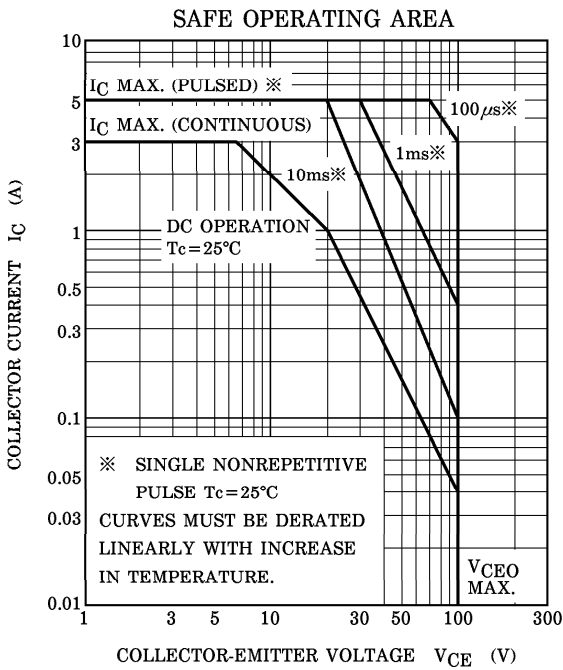
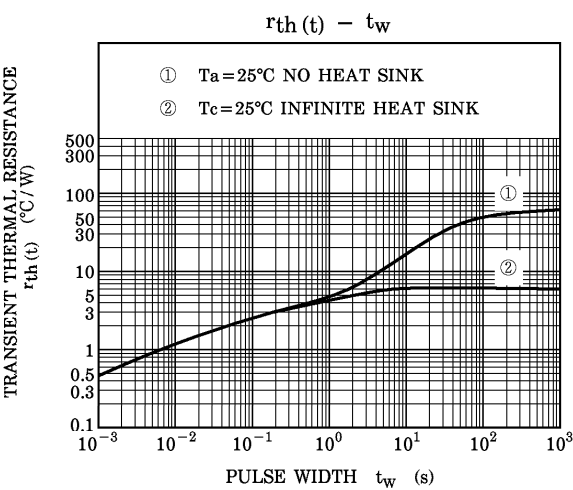
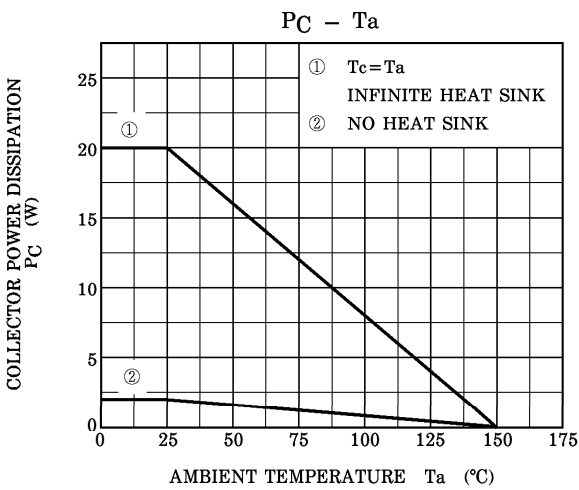
EQUIVALENT CIRCUIT



## ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		$I_{CBO}$	$V_{CB} = 100V, I_E = 0$	—	—	100	$\mu A$
Emitter Cut-off Current		$I_{EBO}$	$V_{EB} = 6V, I_C = 0$	—	—	2.5	mA
Collector-Emitter Breakdown Voltage		$V_{(BR) CEO}$	$I_C = 30mA, I_B = 0$	100	—	—	V
DC Current Gain		$h_{FE(1)}$	$V_{CE} = 3V, I_C = 1.5A$	2000	—	15000	
		$h_{FE(2)}$	$V_{CE} = 3V, I_C = 3A$	1000	—	—	
Collector-Emitter Saturation Voltage		$V_{CE(sat)(1)}$	$I_C = 1.5A, I_B = 3mA$	—	—	1.5	V
		$V_{CE(sat)(2)}$	$I_C = 3A, I_B = 12mA$	—	—	2.0	
Base-Emitter Saturation Voltage		$V_{BE(sat)}$	$I_C = 1.5A, I_B = 3mA$	—	—	2.0	V
Switching Time	Turn-on Time	$t_{on}$	 <p>IN-PUT <math>I_{B1}</math> <math>I_{B2}</math> OUTPUT 20 <math>\mu s</math> 20 <math>\Omega</math> <math>V_{CC} \cong 30V</math> <math>I_{B1} = -I_{B2} = 3mA</math>, DUTY CYCLE <math>\leq 1\%</math></p>	—	1.0	—	$\mu s$
	Storage Time	$t_{stg}$		—	5.0	—	
	Fall Time	$t_f$		—	2.0	—	





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