

TOSHIBA TRANSISTOR SILICON NPN TRIPLE DIFFUSED TYPE (PCT PROCESS)

2SC5172

Unit in mm

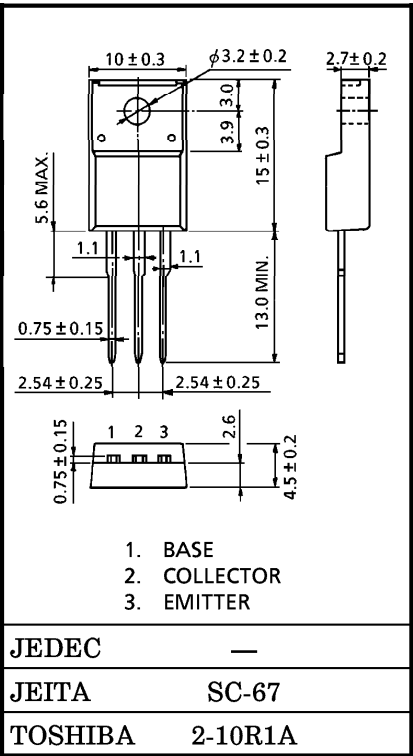
SWITCHING REGULATOR AND HIGH VOLTAGE SWITCHING APPLICATIONS

HIGH SPEED DC-DC CONVERTER APPLICATIONS

- Excellent Switching Times
: $t_r=0.5\mu s$ (Max.), $t_f=0.3\mu s$ (Max.) at $I_C=2A$
- High Collector Breakdown Voltage : $V_{CEO}=400V$

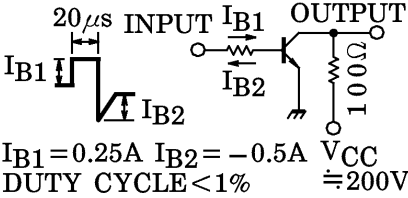
MAXIMUM RATINGS (Tc = 25°C)

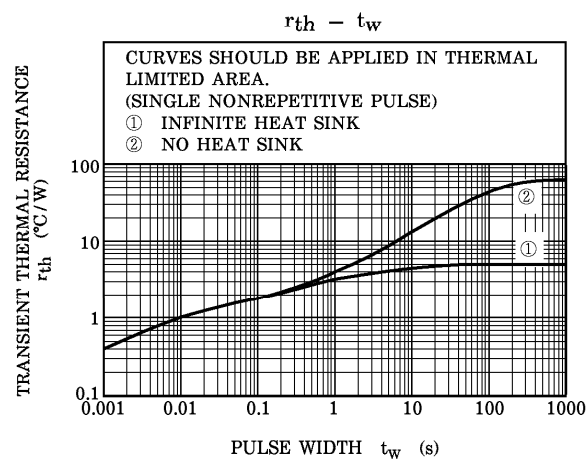
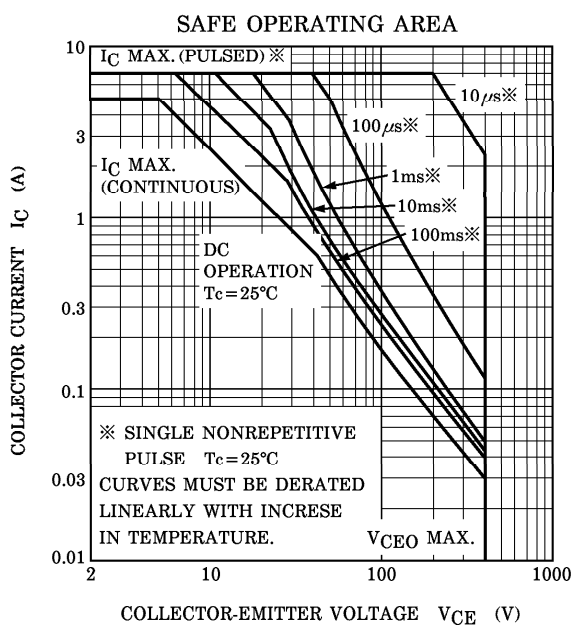
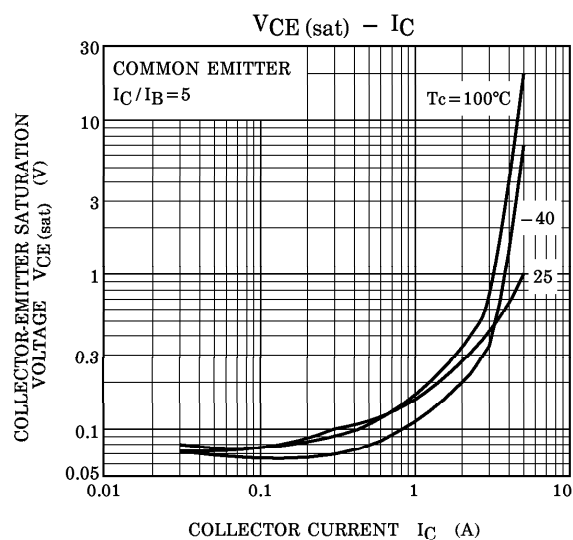
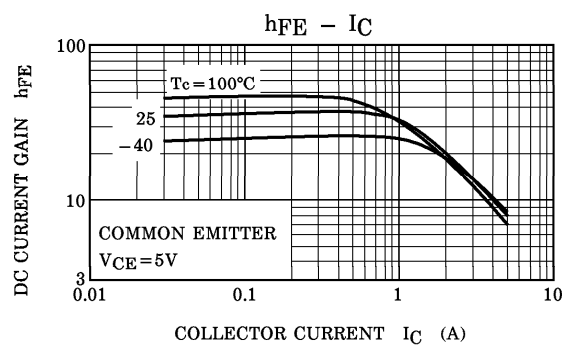
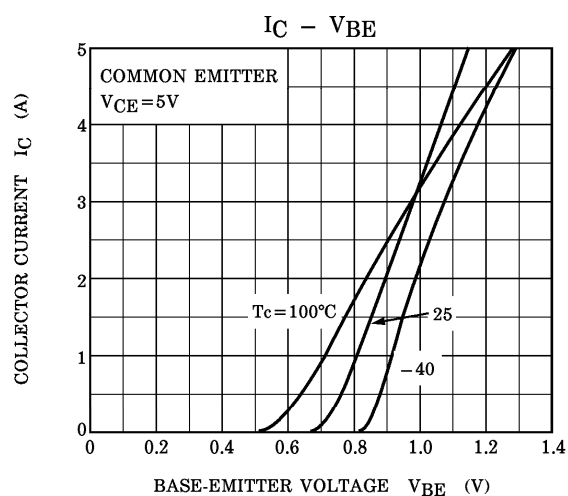
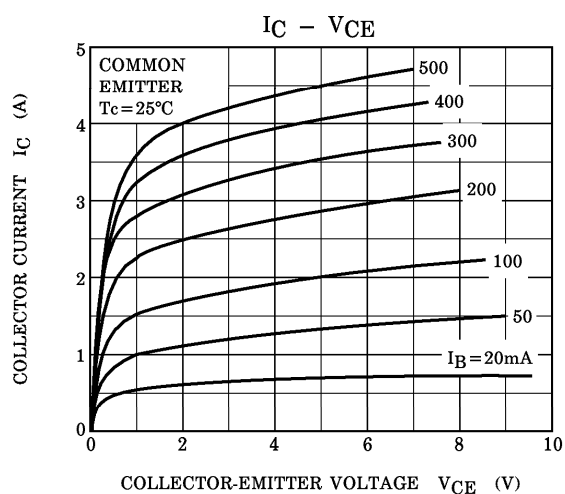
CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage		V_{CB0}	600	V
Collector-Emitter Voltage		V_{CE0}	400	V
Emitter-Base Voltage		V_{EB0}	7	V
Collector Current	DC	I_C	5	A
	Pulse	I_{CP}	7	
Base Current		I_B	2	A
Collector Power Dissipation	$T_a=25^{\circ}C$	P_C	2.0	W
	$T_c=25^{\circ}C$		25	
Junction Temperature		T_j	150	°C
Storage Temperature Range		T_{stg}	-55~150	°C



Weight : 1.7g (Typ.)

ELECTRICAL CHARACTERISTICS ($T_c = 25^\circ\text{C}$)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		I_{CBO}	$V_{CB} = 500\text{V}$, $I_E = 0$	—	—	20	μA
Emitter Cut-off Current		I_{EBO}	$V_{EB} = 7\text{V}$, $I_C = 0$	—	—	100	nA
Collector-Base Breakdown Voltage		$V_{(BR) CBO}$	$I_C = 1\text{mA}$, $I_E = 0$	600	—	—	V
Collector-Emitter Breakdown Voltage		$V_{(BR) CEO}$	$I_C = 10\text{mA}$, $I_B = 0$	400	—	—	V
DC Current Gain		$h_{FE} (1)$	$V_{CE} = 5\text{V}$, $I_C = 1\text{mA}$	13	—	—	
		$h_{FE} (2)$	$V_{CE} = 5\text{V}$, $I_C = 0.5\text{A}$	20	—	65	
Collector-Emitter Saturation Voltage		$V_{CE} (\text{sat})$	$I_C = 2\text{A}$, $I_B = 0.25\text{A}$	—	—	1.0	V
Base-Emitter Saturation Voltage		$V_{BE} (\text{sat})$	$I_C = 2\text{A}$, $I_B = 0.25\text{A}$	—	—	1.3	V
Switching Time	Rise Time	t_r	 $20\mu\text{s}$ INPUT I_{B1} OUTPUT I_{B1} I_{B2} 100Ω $V_{CC} \doteq 200\text{V}$ $I_{B1} = 0.25\text{A}$ $I_{B2} = -0.5\text{A}$ DUTY CYCLE $< 1\%$	—	—	0.5	μs
	Storage Time	t_{stg}		—	—	2.0	
	Fall Time	t_f		—	—	0.3	



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