TOSHIBA TRANSISTOR SILICON NPN TRIPLE DIFFUSED TYPE

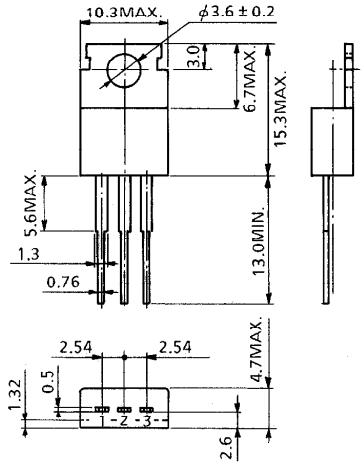
2SC3148

SWITCHING REGULATOR AND HIGH VOLTAGE.
SWITCHING APPLICATIONS.
HIGH SPEED DC-DC CONVERTER APPLICATIONS.

INDUSTRIAL APPLICATIONS

- Excellent Switching Times (I_C=0.8A)
  t_r=1.0μs Max., t_f=1.0μs Max.
- High Collector-Emitter Breakdown Voltage : V_{CEO}=800V

Unit in mm



1. BASE
2. COLLECTOR (HEAT SINK)
3. EMITTER

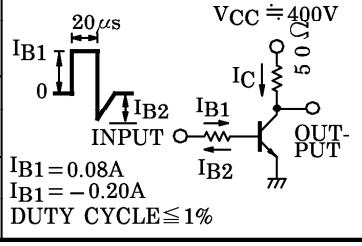
JEDEC	TO-220AB
EIAJ	SC-46
TOSHIBA	2-10A1A

Weight : 1.9g

MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage		V_{CBO}	900	V
Collector-Emitter Voltage		V_{CEO}	800	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	1.5	W
	Tc=25°C		40	
Junction Temperature		T_j	150	°C
Storage Temperature Range		T_{stg}	−55~150	°C

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		I_{CBO}	V_{CB}=800V, I_E=0	—	—	100	μA
Emitter Cut-off Current		I_{EBO}	V_{EB}=7V, I_C=0	—	—	1	mA
Collector-Base Breakdown Voltage		$V_{(BR)CBO}$	I_C=1mA, I_E=0	900	—	—	V
Collector-Emitter Breakdown Voltage		$V_{(BR)CEO}$	I_C=10mA, I_B=0	800	—	—	V
DC Current Gain		h_{FE}	V_{CE}=5V, I_C=0.8A	10	—	—	
Collector-Emitter Saturation Voltage		$V_{CE(sat)}$	I_C=0.8A, I_B=0.16 A	—	—	0.6	V
Base-Emitter Saturation Voltage		$V_{BE(sat)}$	I_C=0.8V, I_B=0.16A	—	—	1.2	V
Switching Time	Rise Time	t_r		—	—	1.0	μs
	Storage Time	t_{stg}		—	—	4.0	
	Fall Time	t_f		—	—	1.0	

I_{B1}=0.08A
I_{B1}=−0.20A
DUTY CYCLE≦1%

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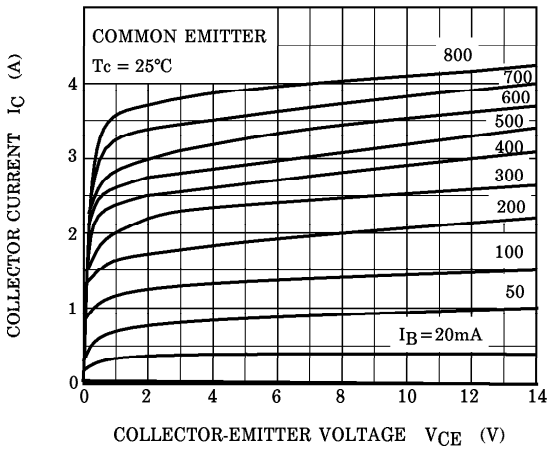
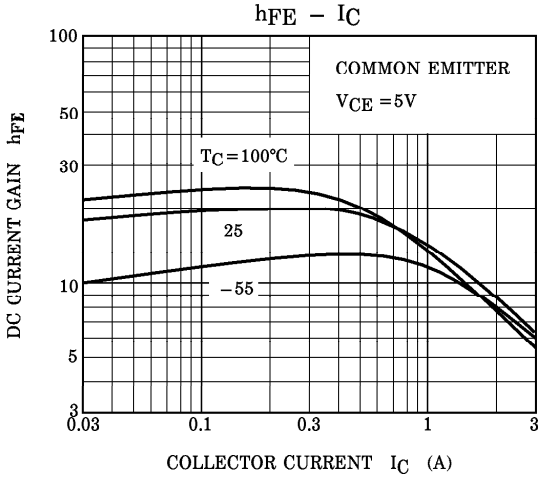
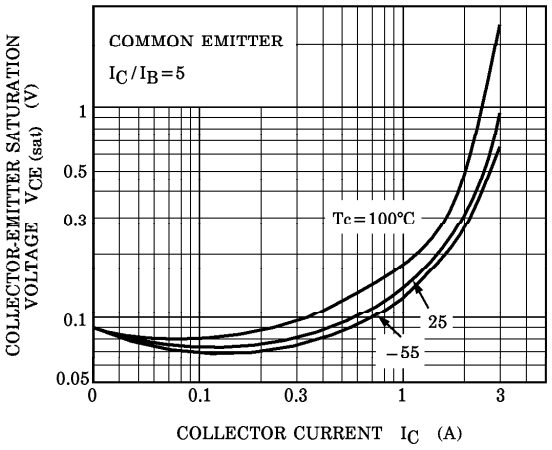
I_C – V_{CE}



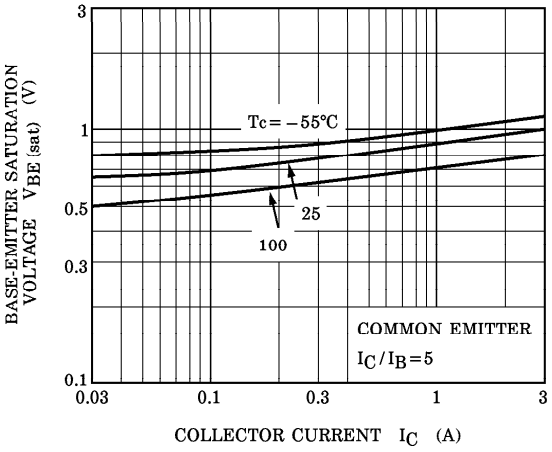
h_{FE} – I_C



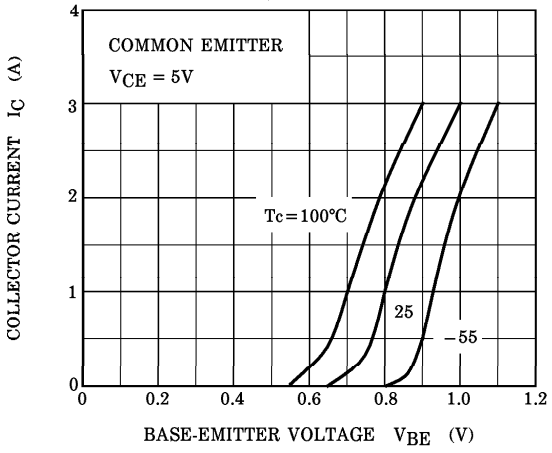
$V_{CE\,(sat)}$ – I_C



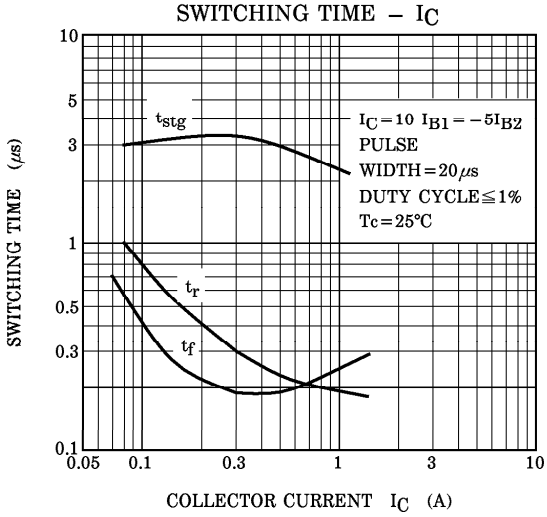
$V_{BE\,(sat)}$ – I_C



I_C – V_{BE}



SWITCHING TIME – I_C



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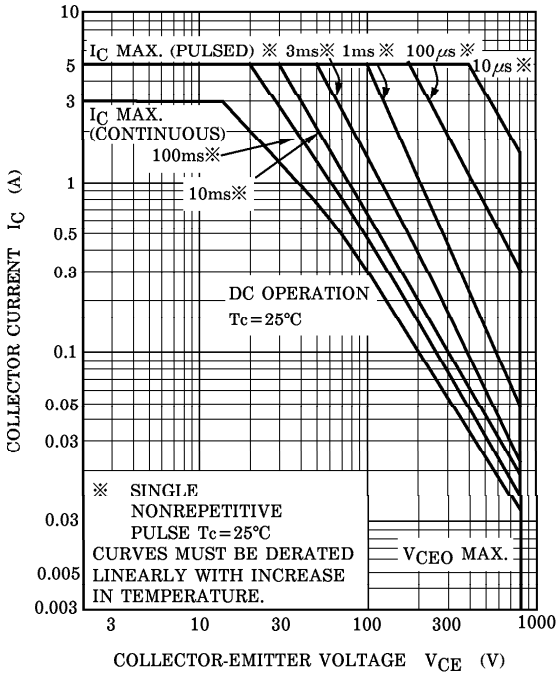
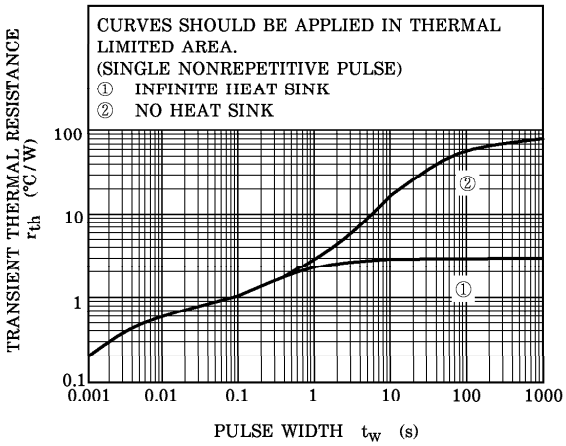
SAFE OPERATING AREA



$r_{th} - t_w$



$P_C - T_C$