TOSHIBA TRANSISTOR SILICON NPN TRIPLE DIFFUSED TYPE

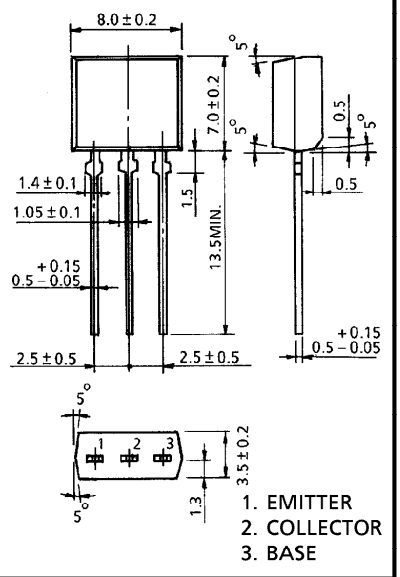
2SC5075

SWITCHING REGULATOR AND HIGH VOLTAGE SWITCHING APPLICATIONS

HIGH SPEED DC-DC CONVERTER APPLICATIONS

- High Speed Switching
  : $t_r = 1.0\mu s$ (Max.), $t_f = 1.0\mu s$ (Max.)
- High Collector Breakdown Voltage : $V_{CEO} = 400V$

Unit in mm



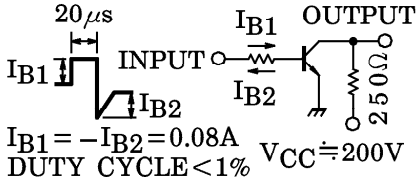
JEDEC	—
EIAJ	—
TOSHIBA	2-8M1A

Weight : 0.55g (Typ.)

MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CBO}	500	V
Collector-Emitter Voltage	V_{CEO}	400	V
Emitter-Base Voltage	V_{EBO}	7	V
Collector Current	I_C	2	A
Base Current	I_B	0.5	A
Collector Power Dissipation	P_C	1.3	W
Junction Temperature	T_j	150	°C
Storage Temperature Range	T_{stg}	−55~150	°C

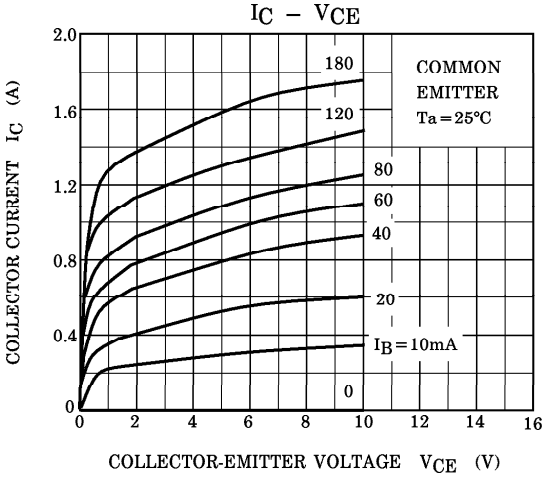
ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		I_{CBO}	$V_{CB} = 400V$, $I_E = 0$	—	—	100	μA
Emitter Cut-off Current		I_{EBO}	$V_{EB} = 7V$, $I_C = 0$	—	—	1	mA
Collector-Base Breakdown Voltage		$V_{(BR)CBO}$	$I_C = 1mA$, $I_E = 0$	500	—	—	V
Collector-Emitter Breakdown Voltage		$V_{(BR)CEO}$	$I_C = 10mA$, $I_B = 0$	400	—	—	V
DC Current Gain		$h_{FE(1)}$	$V_{CE} = 5V$, $I_C = 0.1A$	20	—	—	
		$h_{FE(2)}$	$V_{CE} = 5V$, $I_C = 1A$	8	—	—	
Saturation Voltage	Collector-Emitter	$V_{CE(sat)}$	$I_C = 1A$, $I_B = 0.2A$	—	—	1.0	V
	Base-Emitter	$V_{BE(sat)}$	$I_C = 1A$, $I_B = 0.2A$	—	—	1.5	
Switching Time	Rise Time	t_r		—	—	1.0	μs
	Storage Time	t_{stg}		—	—	2.5	
	Fall Time	t_f		—	—	1.0	

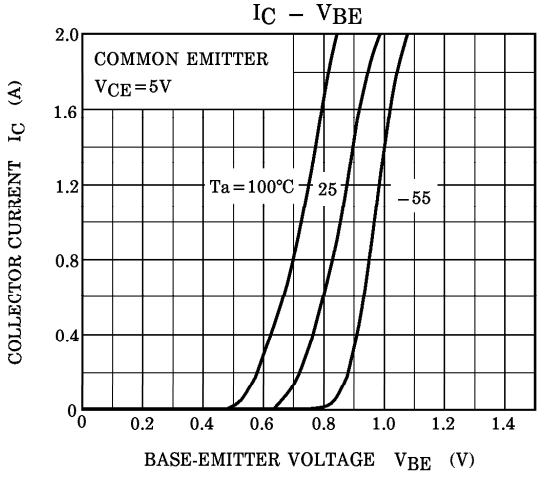
$I_{B1} = -I_{B2} = 0.08A$
DUTY CYCLE < 1%
$V_{CC} \fallingdotseq 200V$

961001EAA2

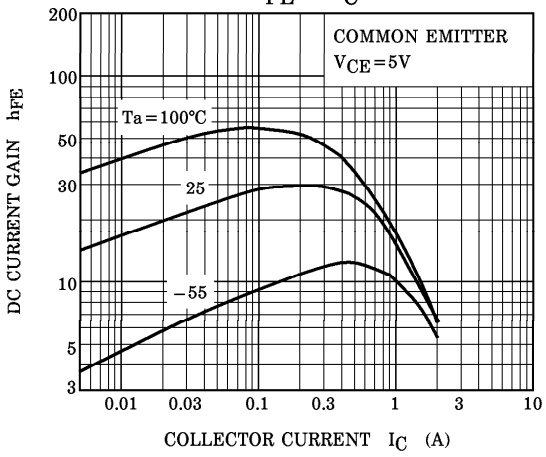
I_C – V_{CE}



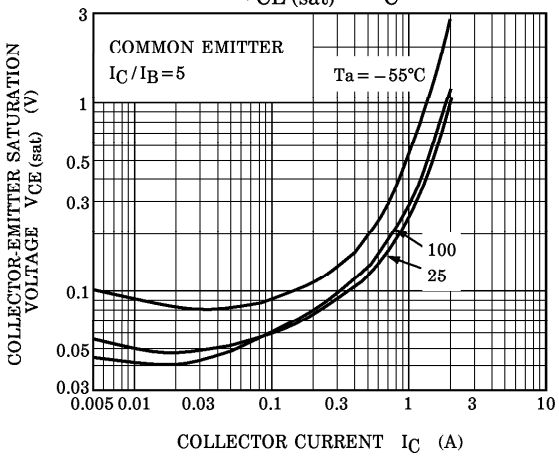
I_C – V_{BE}



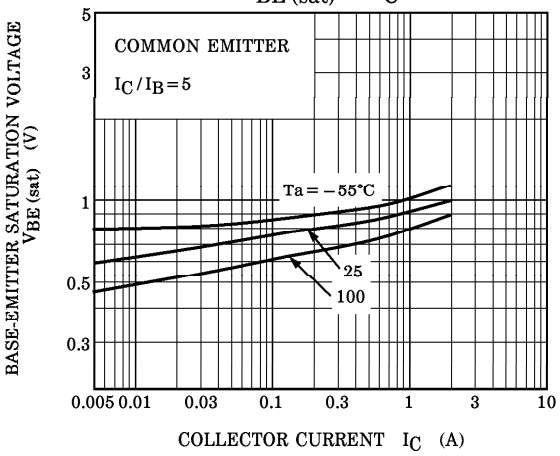
h_{FE} – I_C



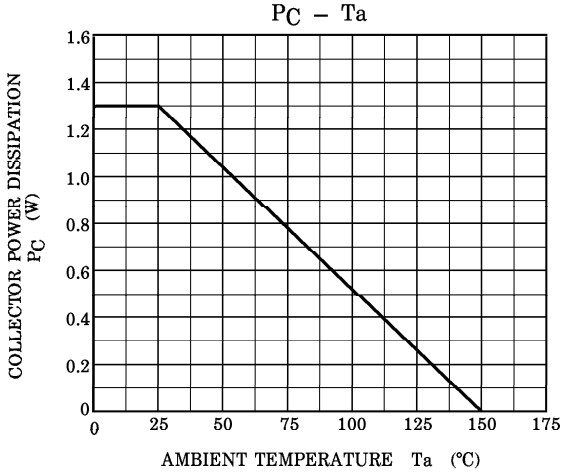
$V_{CE\,(sat)}$ – I_C



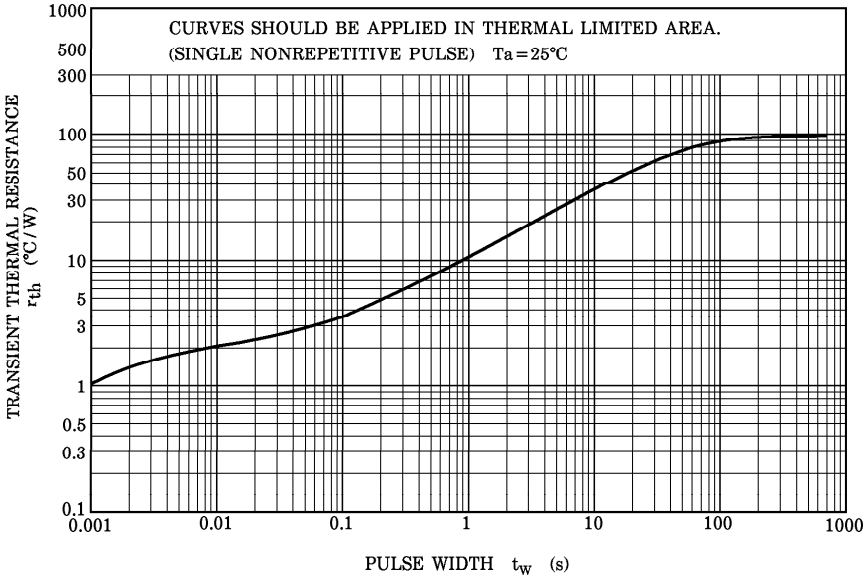
$V_{BE\,(sat)}$ – I_C



P_C – Ta



$r_{th} - t_w$



SAFE OPERATING AREA