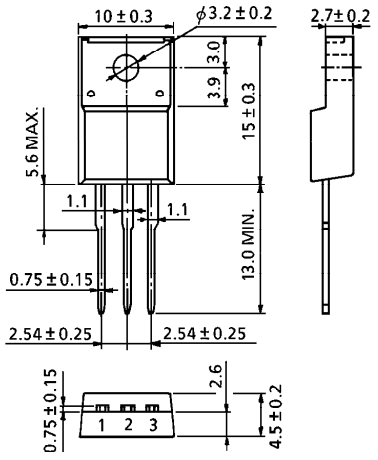
TOSHIBA TRANSISTOR SILICON NPN TRIPLE DIFFUSED TYPE

2SD2352

POWER AMPLIFIER APPLICATIONS

- High DC Current Gain : h_{FE} = 800~3200
- Low Collector Saturation Voltage : $V_{CE\ (sat)}$ = 0.3V (Typ.)

Unit in mm



1. BASE
2. COLLECTOR
3. EMITTER

JEDEC	—
EIAJ	SC-67
TOSHIBA	2-10R1A

Weight : 1.7g (Typ.)

MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage		V_{CBO}	60	V
Collector-Emitter Voltage		V_{CEO}	60	V
Emitter-Base Voltage		V_{EBO}	7	V
Collector Current	DC	I_C	2	A
	Pulse	I_{CP}	4	
Base Current		I_B	0.4	A
Collector Power Dissipation	Ta = 25°C	P_C	2	W
	Tc = 25°C		25	
Junction Temperature		T_j	150	°C
Storage Temperature Range		T_{stg}	−55~150	°C

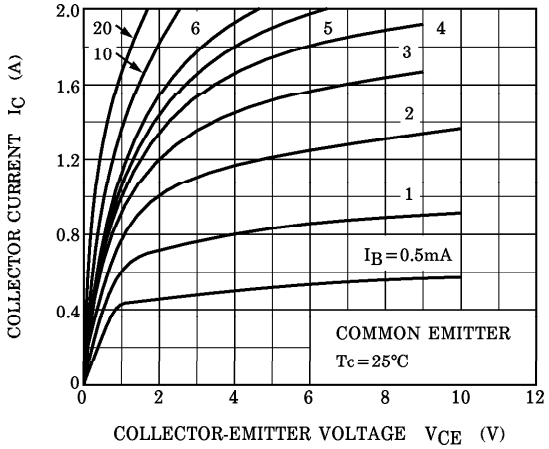
ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	I_{CBO}	V_{CB} = 60V, I_E = 0	—	—	100	μA
Emitter Cut-off Current	I_{EBO}	V_{EB} = 7V, I_C = 0	—	—	100	μA
Collector-Emitter Breakdown Voltage	V_{CEO}	I_C = 50mA, I_B = 0	60	—	—	V
DC Current Gain	$h_{FE\ (1)}$	V_{CE} = 5V, I_C = 0.1A	800	—	3200	
	$h_{FE\ (2)}$	V_{CE} = 5V, I_C = 1A	350	—	—	
Collector-Emitter Saturation Voltage	$V_{CE\ (sat)}$	I_C = 0.5A, I_B = 5mA	—	0.3	1.0	V
Base-Emitter Voltage	V_{BE}	V_{CE} = 5V, I_C = 0.5A	—	0.7	1.0	V
Transition Frequency	f_T	V_{CE} = 5V, I_C = 0.5A	—	17	—	MHz
Collector Output Capacitance	C_{ob}	V_{CB} = 10V, I_E = 0, f = 1MHz	—	30	—	pF

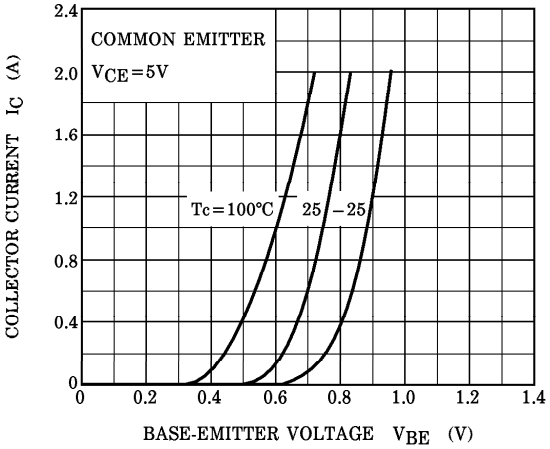
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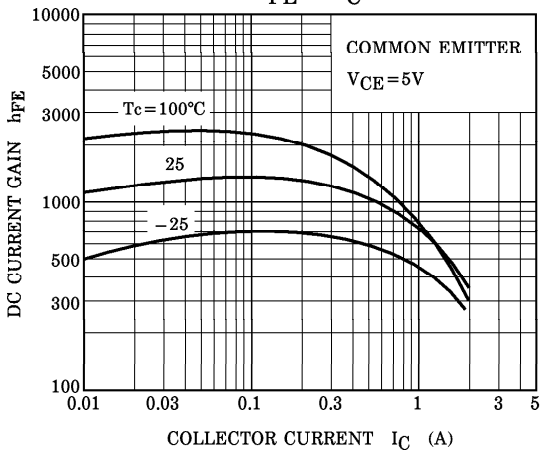
I_C – V_{CE}



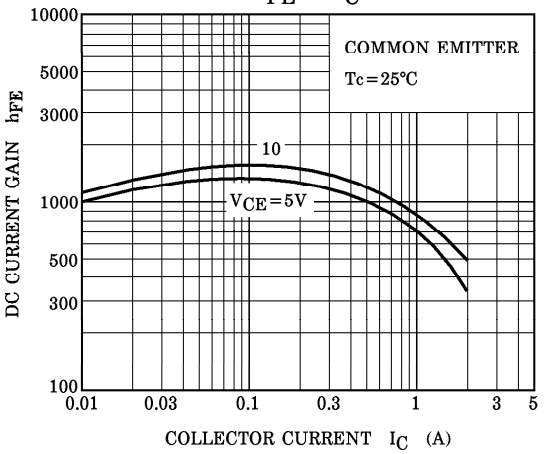
I_C – V_{BE}



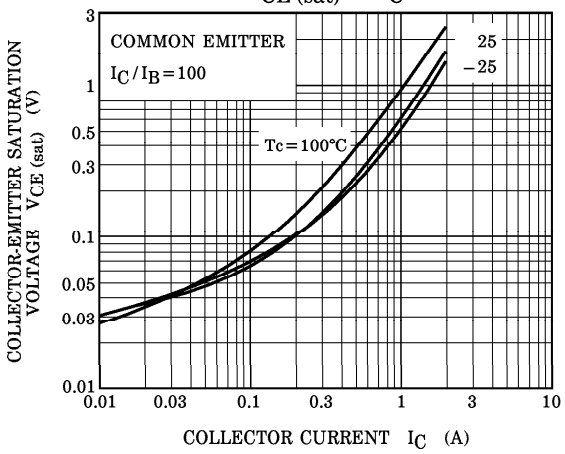
h_{FE} – I_C



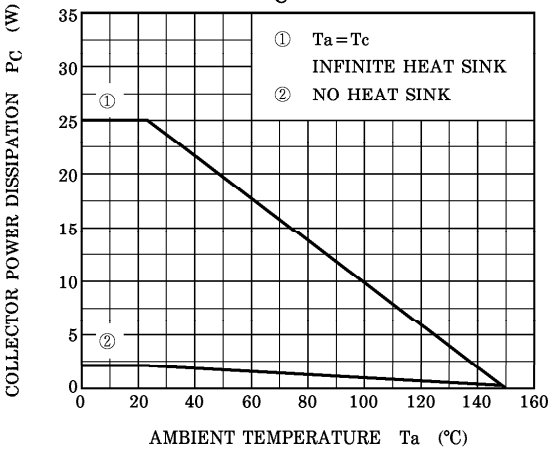
h_{FE} – I_C



$V_{CE\,(sat)}$ – I_C



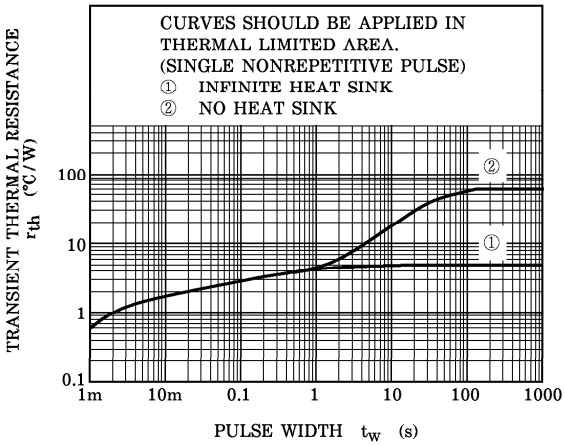
P_C – Ta



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$r_{th} - t_w$



SAFE OPERATING AREA

