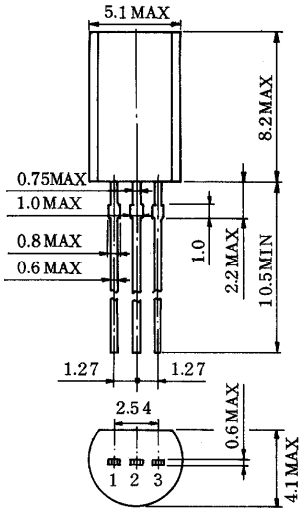
TOSHIBA TRANSISTOR SILICON PNP EPITAXIAL PLANAR TYPE

2SA1382

POWER AMPLIFIER APPLICATIONS
HIGH SPEED SWITCHING APPLICATIONS

- High DC Current Gain : h_{FE} = 150~400 (I_C = −0.5A)
- Low Saturation Voltage
  : $V_{CE(sat)}$ = −0.5V (MAX.) (I_C = −1A)
- High Speed Switching : t_{stg} = 1.0 μs (TYP.)

Unit in mm



1. EMITTER
2. COLLECTOR
3. BASE

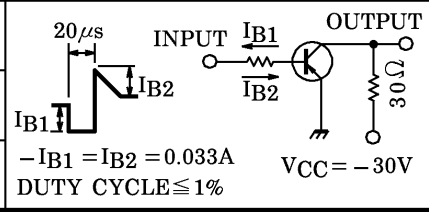
JEDEC	TO-92MOD
EIAJ	—
TOSHIBA	2-5J1A

Weight : 0.36g

MAXIMUM RATINGS (Ta = 25°C)

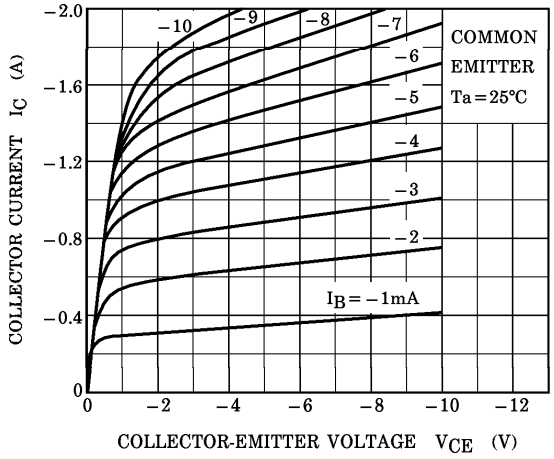
CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage		V_{CBO}	−50	V
Collector-Emitter Voltage		V_{CEO}	−50	V
Emitter-Base Voltage		V_{EBO}	−7	V
Collector Current	DC	I_C	−2	A
	Peak	I_{CP}	−4	
Base Current		I_B	−1	A
Collector Power Dissipation		P_C	900	mW
Junction Temperature		T_j	150	°C
Storage Temperature Range		T_{stg}	−55~150	°C

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

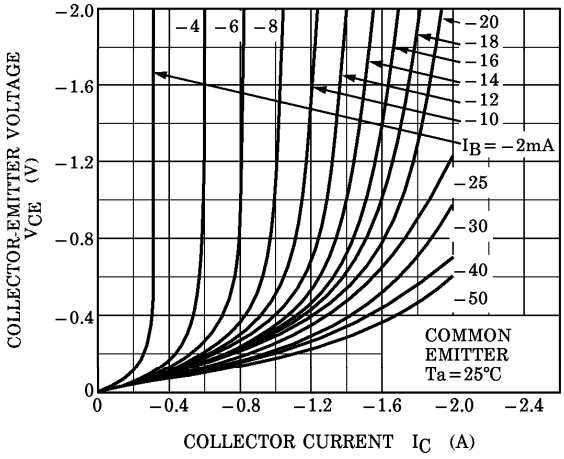
CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		I_{CBO}	V_{CB} = −50V, I_E = 0	—	—	−0.1	μA
Emitter Cut-off Current		I_{EBO}	V_{EB} = −7V, I_C = 0	—	—	−0.1	μA
Collector-Emitter Breakdown Voltage		$V_{(BR)CEO}$	I_C = −10mA, I_B = 0	−50	—	—	V
DC Current Gain		$h_{FE(1)}$	V_{CE} = −2V, I_C = −0.5A	150	—	400	
		$h_{FE(2)}$	V_{CE} = −2V, I_C = −1.5A	60	—	—	
Saturation Voltage	Collector-Emitter	$V_{CE(sat)}$	I_C = −1A, I_B = −0.033A	—	−0.2	−0.5	V
	Base-Emitter	$V_{BE(sat)}$	I_C = −1A, I_B = −0.033A	—	−0.9	−1.2	
Transition Frequency		f_T	V_{CE} = −2V, I_C = −0.5A	—	110	—	MHz
Collector Output Capacitance		C_{ob}	V_{CB} = −10V, I_E = 0, f = 1MHz	—	50	—	pF
Switching Time	Turn-on Time	t_{on}		—	0.2	—	μs
	Storage Time	t_{stg}		—	1.0	—	
	Fall Time	t_f		—	0.2	—	

$-I_{B1} = I_{B2} = 0.033A$
DUTY CYCLE ≦ 1%

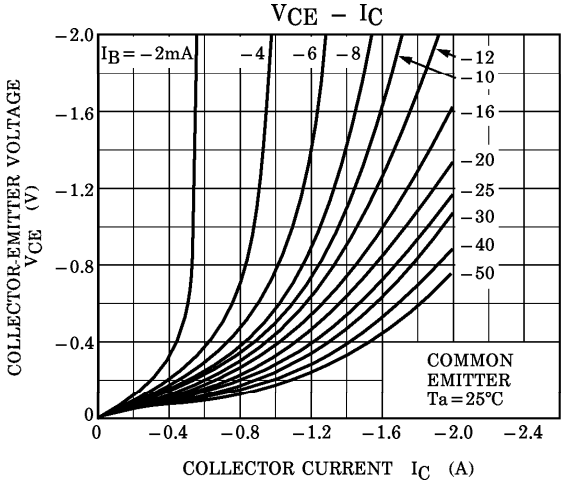
$I_C - V_{CE}$



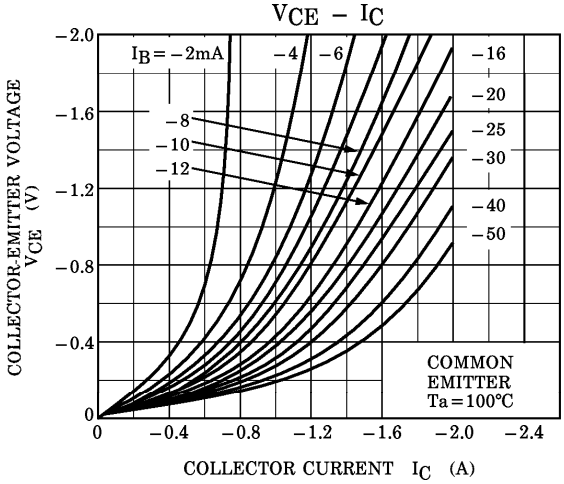
$V_{CE} - I_C$



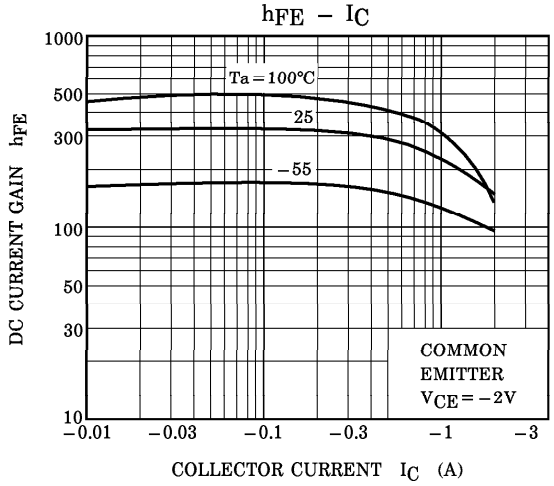
$V_{CE} - I_C$



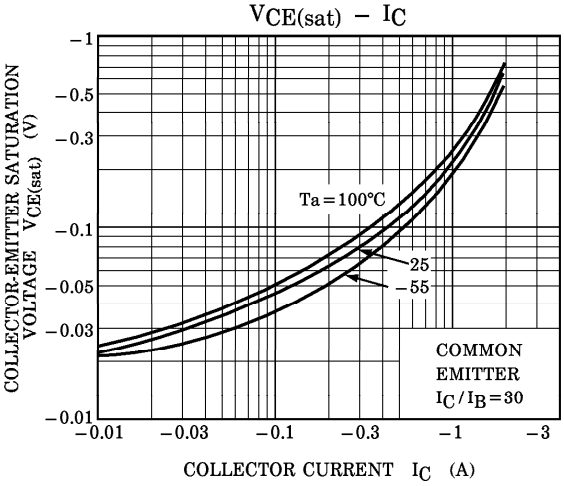
$V_{CE} - I_C$



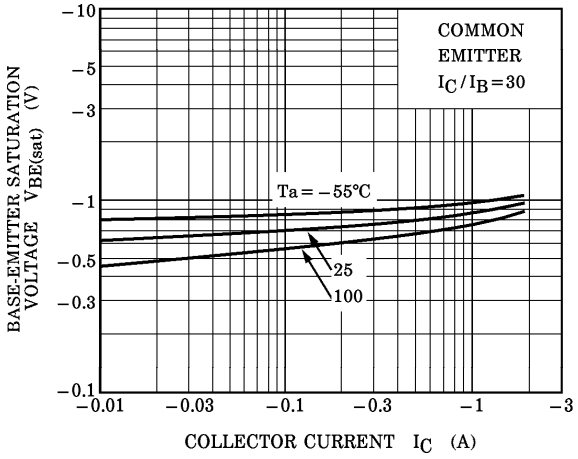
$h_{FE} - I_C$



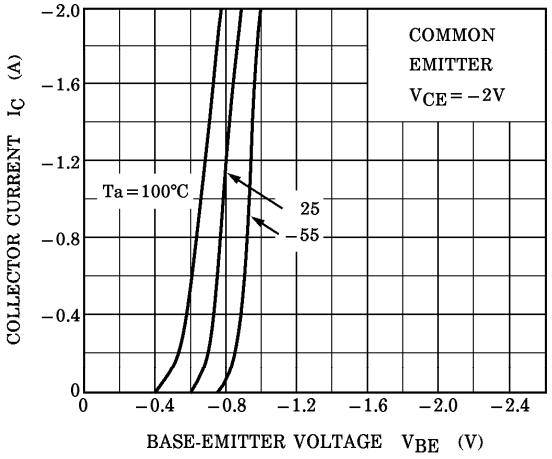
$V_{CE(sat)} - I_C$



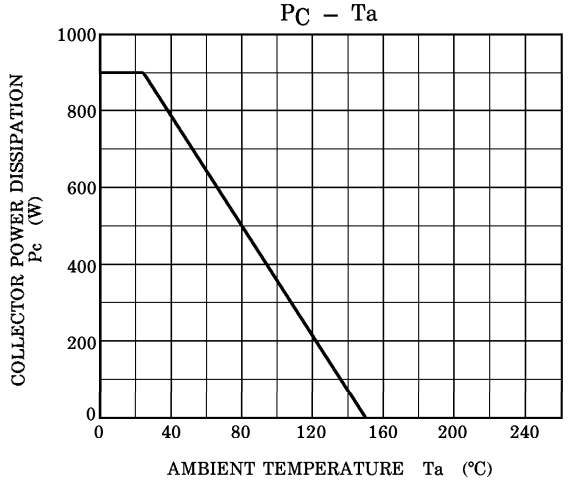
$V_{BE(sat)}$ – I_C



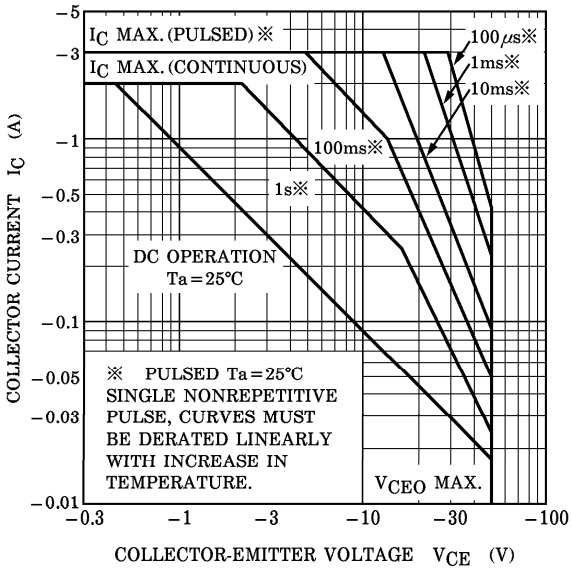
I_C – V_{BE}



P_C – Ta



SAFE OPERATING AREA



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