TOSHIBA TRANSISTOR SILICON PNP TRIPLE DIFFUSED TYPE (PCT PROCESS)

2SB1018A

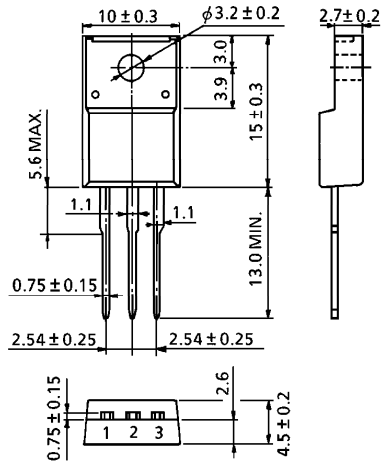
HIGH CURRENT SWITCHING APPLICATIONS

POWER AMPLIFIER APPLICATIONS

INDUSTRIAL APPLICATIONS

- High Collector Current : $I_C = -7$ A
- Low Collector Saturation Voltage
  : $V_{CE\ (sat)} = -0.5$ V (Max.) ($I_C = -4$ A)
- Complementary to 2SD1411A

Unit in mm



1. BASE
2. COLLECTOR
3. EMITTER

JEDEC	—
EIAJ	—
TOSHIBA	2-10R1A

MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage		V_{CBO}	−100	V
Collector-Emitter Voltage		V_{CEO}	−80	V
Emitter-Base Voltage		V_{EBO}	−5	V
Collector Current		I_C	−7	A
Base Current		I_B	−1	A
Collector Power Dissipation	Ta = 25°C	P_C	2.0	W
	Tc = 25°C		30	
Junction Temperature		T_j	150	°C
Storage Temperature Range		T_{stg}	−55~150	°C

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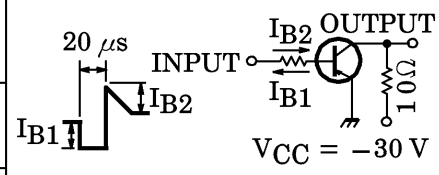
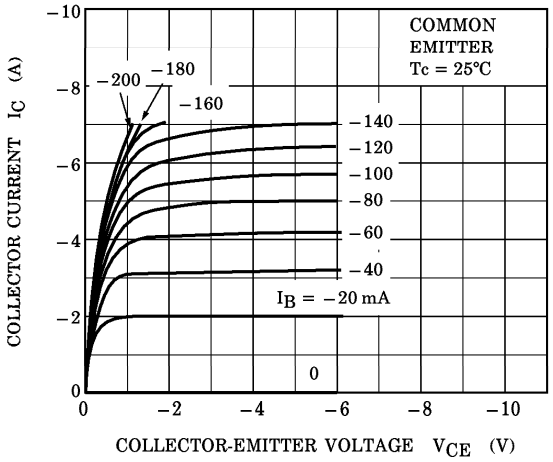
ELECTRICAL CHARACTERISTICS (Ta = 25°C)

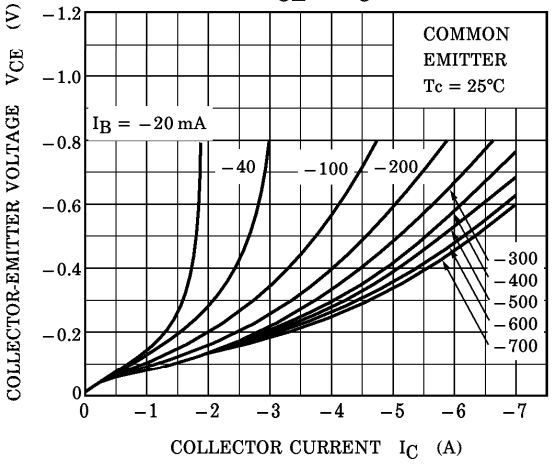
CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		I_{CBO}	$V_{CB} = -100$ V, $I_E = 0$	—	—	−5	μA
Emitter Cut-off Current		I_{EBO}	$V_{EB} = -5$ V, $I_C = 0$	—	—	−5	μA
Collector-Emitter Breakdown Voltage		$V_{(BR)CEO}$	$I_C = -50$ mA, $I_B = 0$	−80	—	—	V
DC Current Gain		$h_{FE(1)}$ (Note)	$V_{CE} = -1$ V, $I_C = -1$ A	70	—	240	
		$h_{FE(2)}$	$V_{CE} = -1$ V, $I_C = -4$ A	30	—	—	
Saturation Voltage	Collector-Emitter	$V_{CE(sat)}$	$I_C = -4$ A, $I_B = -0.4$ A	—	−0.3	−0.5	V
	Base-Emitter	$V_{BE(sat)}$	$I_C = -4$ A, $I_B = -0.4$ A	—	−0.9	−1.4	
Transition Frequency		f_T	$V_{CE} = -4$ V, $I_C = -1$ A	—	10	—	MHz
Collector Output Capacitance		C_{ob}	$V_{CB} = -10$ V, $I_E = 0$, f = 1 MHz	—	250	—	pF
Switching Time	Turn-on Time	t_{on}		—	0.4	—	μs
	Storage Time	t_{stg}		—	2.5	—	
	Fall Time	t_f	$-I_{B1} = I_{B2} = 0.3$ A, DUTY CYCLE ≦ 1%	—	0.5	—	

(Note) : $h_{FE(1)}$ Classification O : 70~140, Y : 120~240

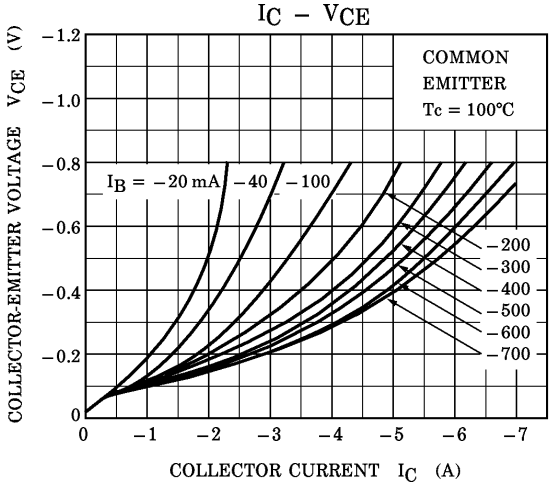
$I_C - V_{CE}$



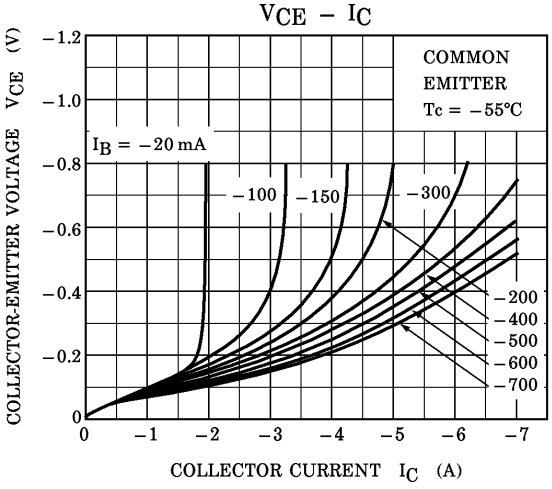
$V_{CE} - I_C$



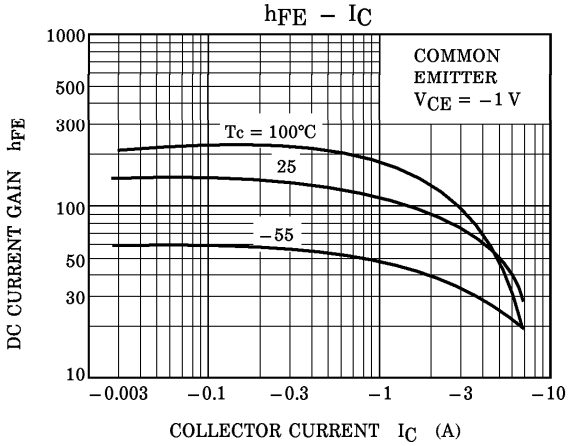
$I_C - V_{CE}$



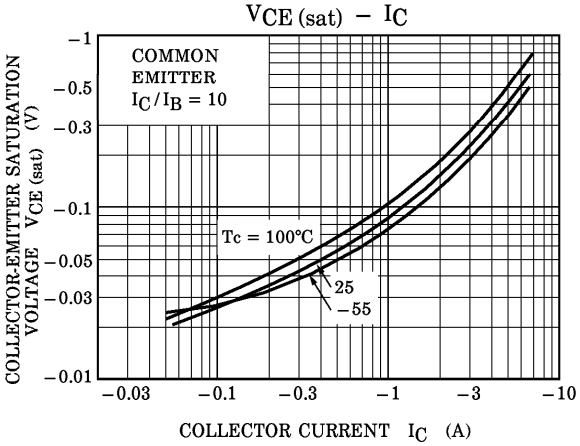
$V_{CE} - I_C$



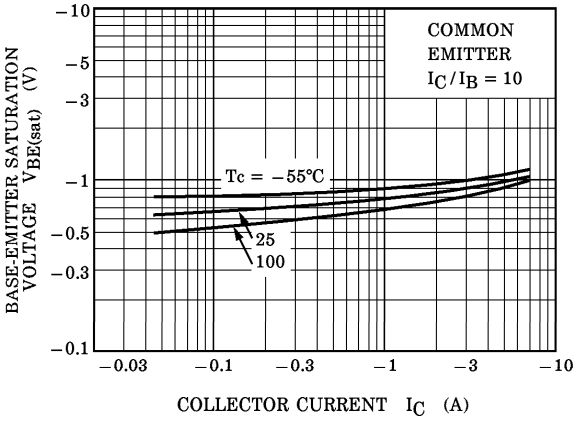
$h_{FE} - I_C$



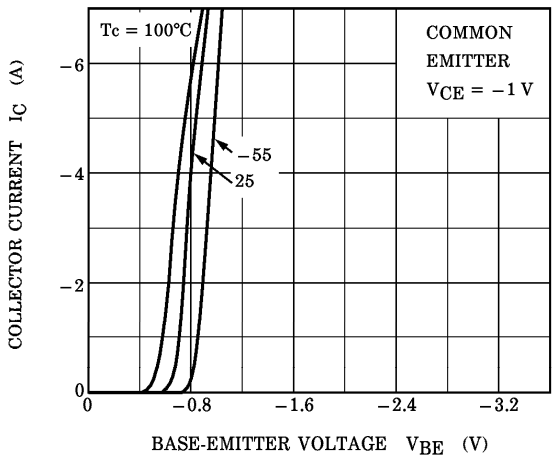
$V_{CE\,(sat)} - I_C$



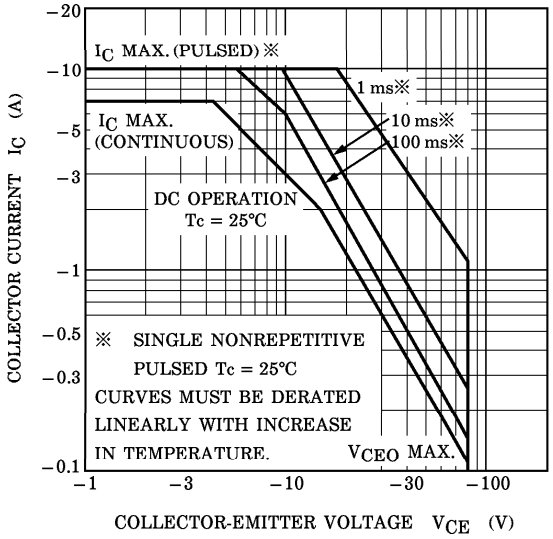
$V_{BE(sat)}$ – I_C



I_C – V_{BE}



SAFE OPERATING AREA



r_{th} – t_w