SILICON NPN TRIPLE DIFFUSED TYPE

2N6250

DC-DC CONVERTER, SWITCHING REGULATOR
AND HIGH POWER AMPLIFIER APPLICATIONS.

FEATURES:

. High Collector-Emitter Sustaining Voltage
: $V_{CEO(SUS)}$=275V (Min.)

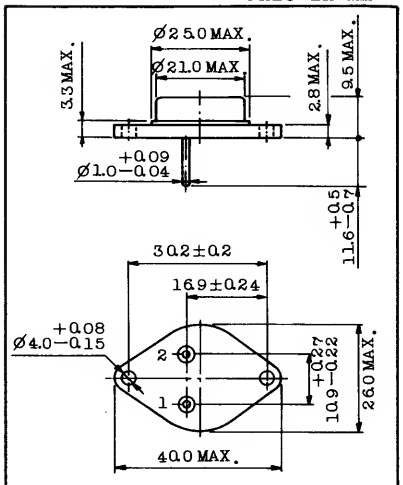
. Low Saturation Voltage : $V_{CE(sat)}$ <1.5V
@ I_C=10A, I_B=1.25A

. Excellent Switching Times : t_r < 2.0μs, t_f <1.0μs
@ I_C=10A, I_B=±1.25A

. High Collector Power Dissipation Capacity
: P_C=175W (Max.)

. Excellent Area of Safe Operatings

Unit in mm



1. BASE
2. EMITTER
COLLECTOR (CASE)

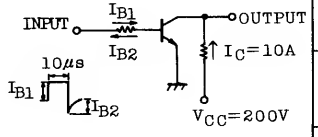
JEDEC	TO-204MA/TO-3
EIAJ	TC-3, TB-3
TOSHIBA	2-21E1A

Weight : 15.8g

MAXIMUM RATINGS (Ta=25°C)

	CHARACTERISTIC		SYMBOL	RATING	UNIT
*	Collector-Base Voltage		V_{CBO}	375	V
	Collector-Emitter Sustaining Voltage (R_{BE}=50Ω)		$V_{CER(SUS)}$	300	V
*	Collector-Emitter Sustaining Voltage (V_{BE}=0)		$V_{CEX(SUS)}$	300	V
	Collector-Emitter Sustaining Voltage		$V_{CEO(SUS)}$	275	V
*	Emitter-Base Voltage		V_{EBO}	6	V
*	Collector Current	DC	I_C	10	A
		Peak	I_{CM}	30	A
*	Base Current		I_B	10	A
*	Collector Power Dissipation	Tc=25°C	P_C	175	W
		Tc=100°C		100	W
	Derate Linearly above 25°C			1.0	W/°C
*	Junction Temperature		T_j	200	°C
*	Storage Temperature Range		T_{stg}	-65 ~ 200	°C
*	Lead Temperature (0.8mm from case for 10s)		T_L	230	°C

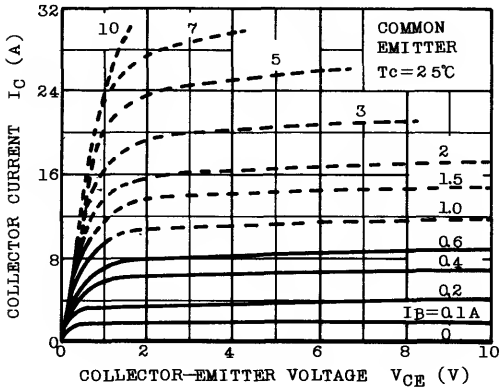
ELECTRICAL CHARACTERISTICS ($Ta=25^{o}C$)

	CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
*	Collector Cut-off Current		I_{CEV}	V_{CE}=300V, V_{BE}=-1.5V	-	-	5	mA
*	Collector Cut-off Current		I_{CEV}	V_{CE}=300V, V_{BE}=-1.5V $Tc=125^{o}C$	-	-	10	mA
	Collector Cut-off Current		I_{CEO}	V_{CE}=225V, I_B=0	-	-	5	mA
*	Emitter Cut-off Current		I_{EBO}	V_{EB}=6V, I_C=0	-	-	1	mA
*	Collector-Emitter Sustaining Voltage		$V_{CER(SUS)}$ **	I_C=0.2A, R_{BE}=50Ω	300	-	-	V
*	Collector-Emitter Sustaining Voltage		$V_{CEO(SUS)}$ **	I_C=0.2A, I_B=0	275	-	-	V
*	Emitter-Base Breakdown Voltage		$V_{(BR)EBO}$	I_E=1mA, I_C=0	6	-	-	V
*	DC Current Gain		h_{FE}	V_{CE}=3V, I_C=10A	8	-	50	
*	Saturation Voltage	Collector-Emitter	$V_{CE(sat)}$	I_C=10A, I_B=1.25A	-	-	1.5	V
		Base-Emitter	$V_{BE(sat)}$	I_C=10A, I_B=1.25A	-	-	2.25	V
*	Small Signal Current Gain		$\|h_{fe}\|$	V_{CE}=10V, I_C=1A f=1MHz	2.5	-	-	
*	Switching Time	Rise Time	t_r	 I_{B1}=-I_{B2}=1.25A DUTY CYCLE≤2%	-	-	2.0	μs
		Storage Time	t_s		-	-	3.5	μs
		Fall Time	t_f		-	-	1.0	μs
*	Second Breakdown Collecotr Current (Base Forward Bias)		$I_{s/b}$	V_{CE}=30V, t=1s (non-repetitive)	5.8	-	-	A
*	Second Breakdown Energy (Base Reverse Bias)		$E_{s/b}$	I_C=10A, V_{BE}=-4V L=50μH	2.5	-	-	mJ

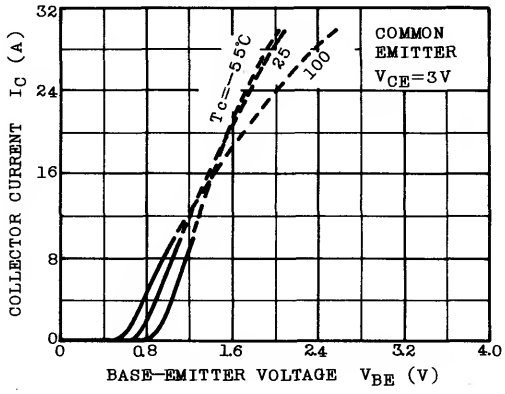
* In accodance with JEDEC registration data.

** The sustaining voltages $V_{CER(SUS)}$ and $V_{CEO(SUS)}$ MUST NOT be measured on a curve tracer.

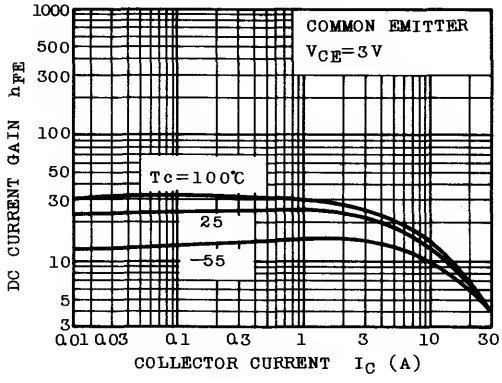
$I_C - V_{CE}$



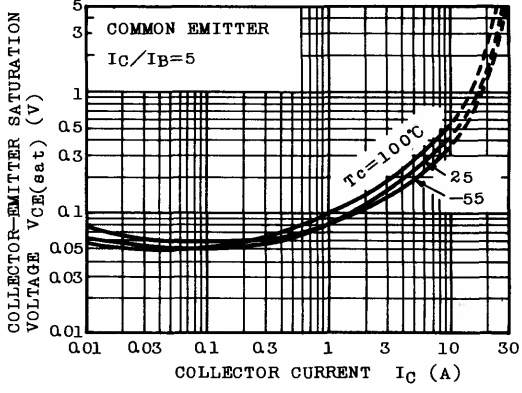
$I_C - V_{BE}$



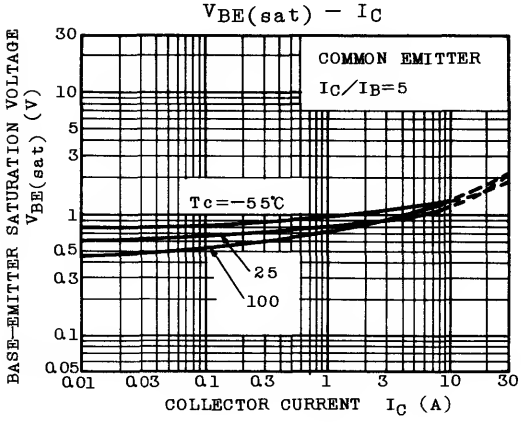
$h_{FE} - I_C$



$V_{CE(sat)} - I_C$



$V_{BE(sat)} - I_C$



$P_C - T_c$