TOSHIBA SEMICONDUCTOR
TECHNICAL DATA

TOSHIBA TRANSISTOR

2N3055

SILICON NPN TRIPLE DIFFUSED TYPE

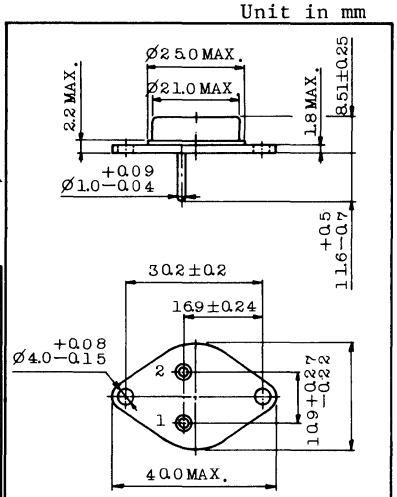
GENERAL PURPOSE POWER TRANSISTOR.

POWER REGULATOR, SWITCHING AND SOLLENOID DRIVES APPLICATIONS.

FEATURES:

. High Gain at High Current
. Low Saturation Voltage : $V_{CE(sat)} < 1.1V$, $@I_C=4A, I_B=0.4A$
. 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	2-21D1A

Weight : 12.6g

MAXIMUM RATINGS ($Ta=25^{\circ}C$)

	CHARACTERISTIC	SYMBOL	RATING	UNIT
*	Collcetor-Base Voltage	V_{CBO}	100	V
*	Collector-Emitter Sustaining Voltage ($R_{BE}=100\ \Omega$)	$V_{CER(SUS)}$	70	V
*	Collector-Emitter Sustaining Voltage	$V_{CEO(SUS)}$	60	V
*	Emitter-Base Voltage	V_{EBO}	7	V
*	Collector Current	I_C	15	A
*	Base Current	I_B	7	A
*	Collector Power Dissipation ($Tc=25^{\circ}C$) Derate Linearly	P_C	115	W
			0.66	W / °C
*	Junction Temperature	T_j	200	°C
*	Storage Temperature Range	T_{stg}	−65 ~ 200	°C

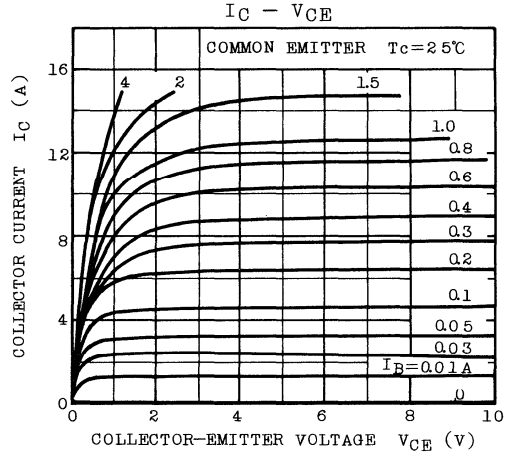
ELECTRICAL CHARACTERISTICS ($Ta=25^{\circ}C$)

	CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
*	Collector Cut-off Current	I_{CEX}	$V_{CE}=100V$, $V_{BE}=-1.5V$	-	-	5	mA
*	Collector Cut-off Current	I_{CEX}	$V_{CE}=100V$, $V_{BE}=-1.5V$, $Tc=150^{\circ}C$	-	-	30	mA
*	Collector Cut-off Current	I_{CEO}	$V_{CE}=30V$, $I_B=0$	-	-	0.7	mA
*	Emitter Cut-off Current	I_{EBO}	$V_{EB}=7V$, $I_C=0$	-	-	5	mA
*	Collector-Emitter Sustaining Voltage	$V_{CER(SUS)}$ **	$I_C=0.2A$, $R_{BE}=100\ \Omega$	70	-	-	V
*	Collector-Emitter Sustaining Voltage	$V_{CEO(SUS)}$ **	$I_C=0.2A$, $I_B=0$	60	-	-	V
*	DC Current Gain	h_{FE}	$V_{CE}=4V$, $I_C=4A$	20	-	70	
			$V_{CE}=4V$, $I_C=10A$	5	-	-	
*	Base-Emitter Voltage	V_{BE}	$V_{CE}=4V$, $I_C=4A$	-	-	1.8	V
*	Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=4A$, $I_B=0.4A$	-	-	1.1	V
			$I_C=10A$, $I_B=3.3A$	-	-	8	V
*	Small Signal Current Gain Cut-off Frequency	f_{hfe}	$V_{CE}=4V$, $I_C=1A$, $f=10kHz$	20	-	-	kHz
*	Small Signal Current Gain	$\lvert h_{fe} \rvert$	$V_{CE}=4V$, $I_C=1A$, $f=1MHz$	2.5	-	-	
*	Second Breakdown Collector Current (Base Forward Bias)	$I_{s/b}$	$V_{CE}=40V$, $t=1s$ (non repetitive)	2.87	-	-	A

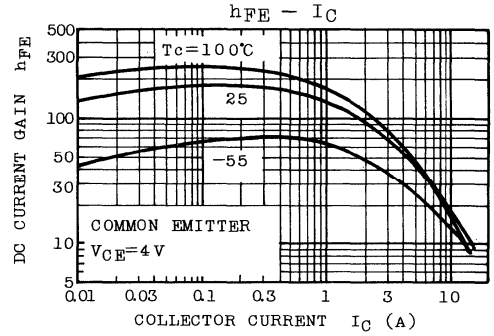
* In Accordance With JEDEC Registration Data.
** The sustaining voltages $V_{CER(SUS)}$ and $V_{CEO(SUS)}$ MUST NOT be measured on a curve tracer.

TOSHIBA CORPORATION

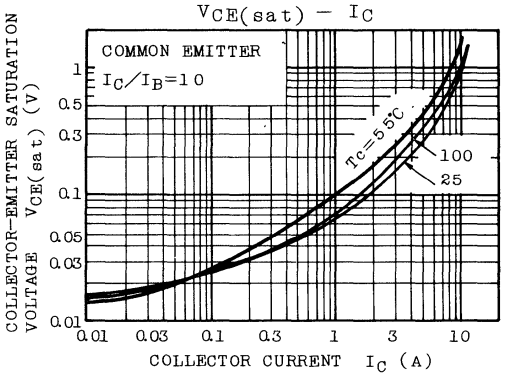
$I_C - V_{CE}$



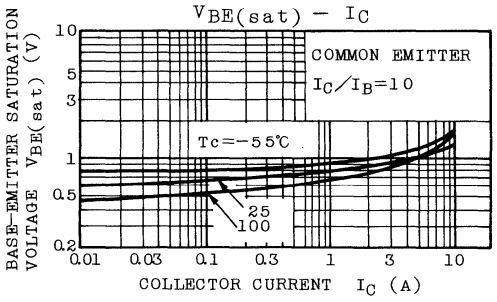
$h_{FE} - I_C$



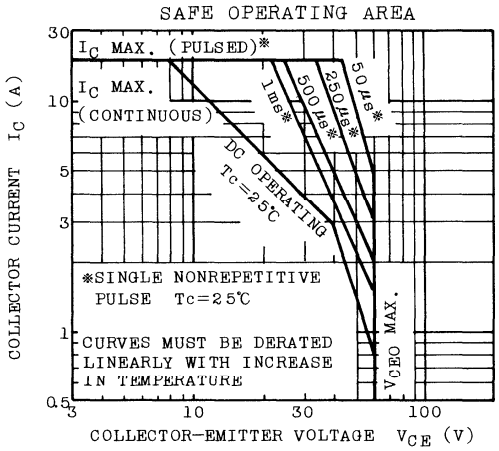
$V_{CE(sat)} - I_C$



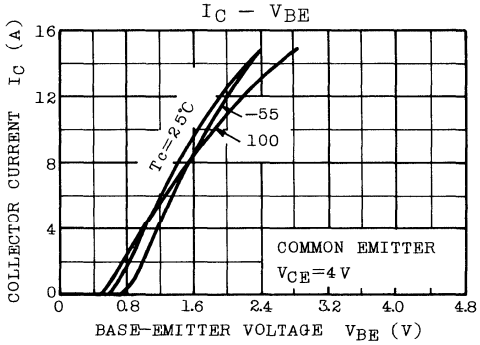
$V_{BE(sat)} - I_C$



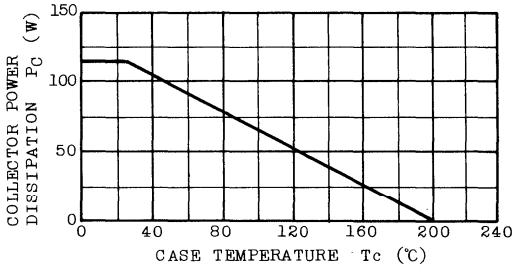
SAFE OPERATING AREA



$I_C - V_{BE}$



$P_C - Tc$



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