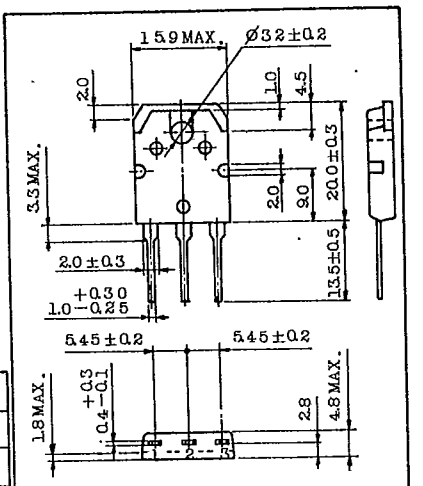
SILICON NPN TRIPLE DIFFUSED TYPE

TSB3055

GENERAL PURPOSE TRANSISTOR
POWER REGULATOR, SWITCHING AND SOLENOID
DRIVE APPLICATIONS.

FEATURES:
- Convenient MOLD Package : Useless Insulation Bushing
- High Gain at High Current
  : h_{FE}=20～100 @ V_{CE}=4V, I_C=4A
- Low Saturation Voltage
  : $V_{CE(sat)}$ <1.1V @ I_C=4A, I_B=0.4A

Unit in mm



1. BASE
2. COLLECTOR(HEAT SINK)
3. EMITTER

JEDEC	–
EIAJ	–
TOSHIBA	2-16B1A

Weight : 4.6g

Notice ; Maximum torque applied to mounting flange is 8 kg·cm

MAXIMUM RATINGS (Ta=25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CBO}	80	V
Collector-Emitter Voltage	V_{CEO}	80	V
Emitter-Base Voltage	V_{EBO}	5	V
Collector Current	I_C	10	A
Base Current	I_B	6	A
Collector Power Dissipation (Tc=25°C)	P_C	70	W
Derate above 25°C		0.56	W/°C
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_{CEX}	V_{CE}=80V, V_{BE}=-1.5V	–	–	1.0	mA
Collector Cut-off Current	I_{CEO}	V_{CE}=80V, I_B=0	–	–	0.7	mA
Emitter Cut-off Current	I_{EBO}	V_{EB}=5V, I_C=0	–	–	5	mA
Collector-Emitter Sustaining Voltage	$V_{CEO(SUS)}$ ※	I_C=200mA, I_B=0	80	–	–	V
DC Current Gain	h_{FE}	V_{CE}=4V, I_C=4A	20	–	100	
		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	–	–	8.0	
Transition Frequency	f_T	V_{CE}=10V, I_C=0.5A, f=1MHz	3.0	8.0	–	MHz
Collector Output Capacitance	C_{ob}	V_{CB}=10V, I_E=0, f=1MHz	–	70	–	pF

※ The sustaining voltage $V_{CEO(SUS)}$ MUST NOT be measured on a curve tracer.

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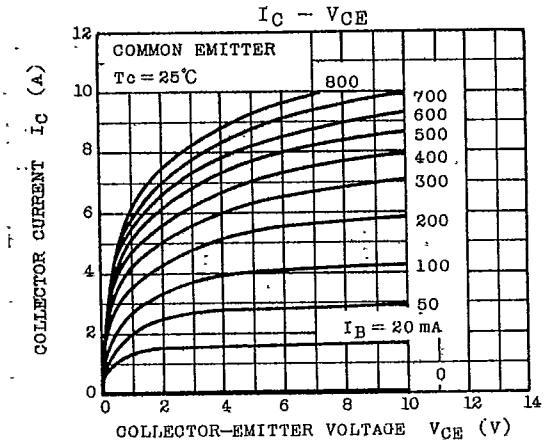
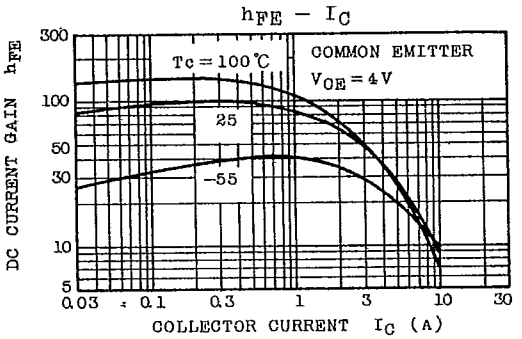
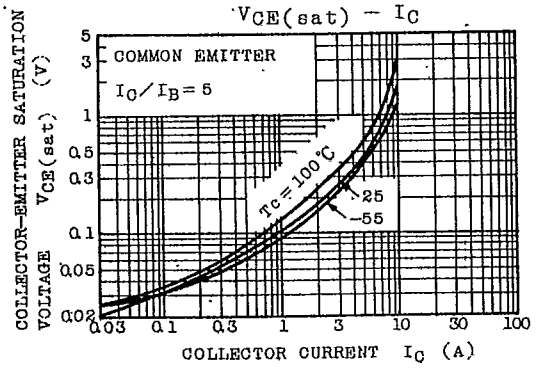
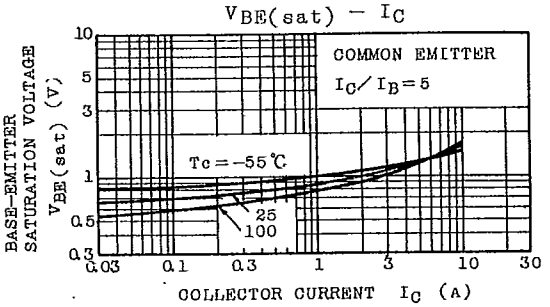
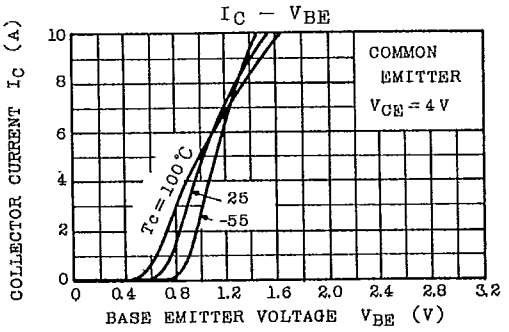
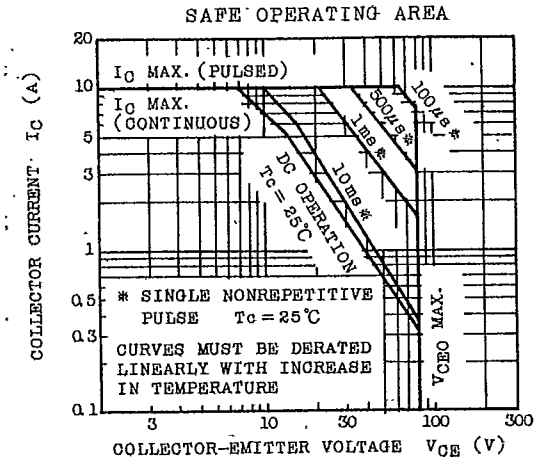

$I_C - V_{CE}$
COMMON EMITTER
Tc = 25℃
800
700
600
500
400
300
200
100
50
I_B = 20 mA
0
COLLECTOR CURRENT I_C (A)
COLLECTOR-EMITTER VOLTAGE V_{CE} (V)

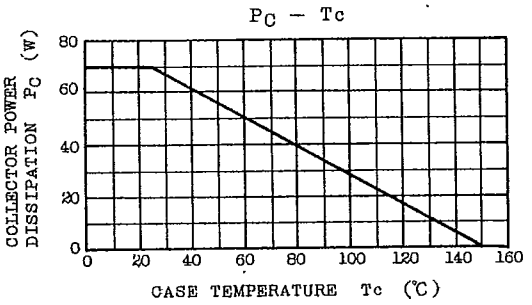

$h_{FE} - I_C$
Tc = 100℃
COMMON EMITTER
V_{CE} = 4 V
25
-55
DC CURRENT GAIN h_{FE}
COLLECTOR CURRENT I_C (A)


$V_{CE(sat)} - I_C$
COMMON EMITTER
I_C / I_B = 5
Tc = 100℃
25
-55
COLLECTOR-EMITTER SATURATION VOLTAGE $V_{CE(sat)}$ (V)
COLLECTOR CURRENT I_C (A)


$V_{BE(sat)} - I_C$
COMMON EMITTER
I_C / I_B = 5
Tc = -55℃
25
100
BASE-EMITTER SATURATION VOLTAGE $V_{BE(sat)}$ (V)
COLLECTOR CURRENT I_C (A)


$I_C - V_{BE}$
COMMON EMITTER
V_{CE} = 4 V
Tc = 100℃
25
-55
COLLECTOR CURRENT I_C (A)
BASE EMITTER VOLTAGE V_{BE} (V)


SAFE OPERATING AREA
I_C MAX. (PULSED)
I_C MAX. (CONTINUOUS)
100μs*
500μs*
1ms*
10ms*
DC OPERATION Tc = 25℃
* SINGLE NONREPETITIVE PULSE Tc = 25℃
CURVES MUST BE DERATED LINEARLY WITH INCREASE IN TEMPERATURE
V_{CEO} MAX.
COLLECTOR CURRENT I_C (A)
COLLECTOR-EMITTER VOLTAGE V_{CE} (V)


P_C - Tc
COLLECTOR POWER DISSIPATION P_C (W)
CASE TEMPERATURE Tc (℃)