NEC
ELECTRON DEVICE

SILICON POWER TRANSISTORS
2SB600/2SD555

AUDIO FREQUENCY POWER AMPLIFIER
PNP/NPN SILICON TRIPLE DIFFUSED TRANSISTORS

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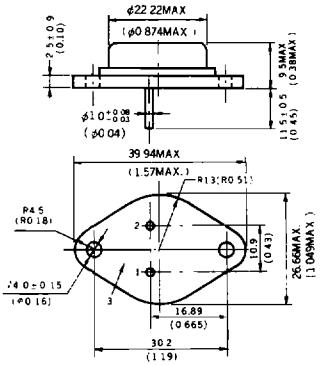
PACKAGE DIMENSIONS
in millimeters (inches)



1. Base
2. Emitter
3. Collector (Case)

EIAJ : TC-3, TB-3
JEDEC : TO-204MA(TO-3)
IEC : C14A, B18

DESCRIPTION

The 2SB600/2SD555 are triple diffused high power transistors designed for use in high power audio amplifier applications.

FEATURES

- Suitable for use in 200 to 300 watts complementary-symmetry audio amplifier.
- High breakdown voltage V_{CEO} = 200V
- High current ratings $I_{C\ (pulse)}$ = 15A
- Wide Safe Operating Area.

ABSOLUTE MAXIMUM RATINGS

		2SB600	2SD555	
Maximum Voltages and Currents (Ta=25°C)				
Collector to Base Voltage	V_{CBO}	−200	250	V
Collector to Emitter Voltage	V_{CEO}	−200	200	V
Emitter to Base Voltage	V_{EBO}	−5	5	V
Collector Current	$I_{C(DC)}$	−10	10	A
Collector Current	$I_{C(pulse)}$*	−15	15	A
Maximum Power Dissipation				
Total Power Dissipation	$P_T(T_C=25°C)$	200		W
Maximum Temperatures				
Junction Temperature	T_j	150		°C
Storage Temperature Range	T_{stg}	−65 to +150		°C

* PW ≤10 ms, duty cycle ≤ 50%

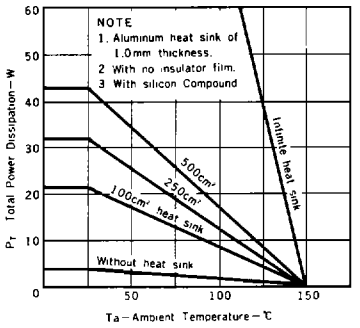
ELECTRICAL CHARACTERISTICS (Ta = 25°C) 2SB600/2SD555

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Collector Cutoff Current	I_{CBO}			-50/50	μA	V_{CB} = -200/200V, I_E = 0
Emitter Cutoff Current	I_{EBO}			-50/50	μA	V_{EB} = -3.0/3.0V, I_C = 0
DC Current Gain	h_{FE1}	20/20	100/55			V_{CE} = -5.0/5.0V, I_C = -50/50 mA*
	h_{FE2}	40/40	70/70	200/200		V_{CE} = -5.0/5.0V, I_C = -2.0/2.0A*
Collector Saturation Voltage	$V_{CE(sat)}$		-1.9/0.9	-3.0/3.0	V	I_C = -10/10A, I_B = -1.0/1.0A*
Base Saturation Voltage	$V_{BE(sat)}$		-2.3/1.6	-3.0/3.0	V	I_C = -10/10A, I_B = -1.0/1.0A*
Gain Bandwidth Product	f_T		14/15		MHz	V_{CE} = -5.0/5.0V, I_C = -0.2/0.2A
Output Capacitance	C_{ob}		450/300		pF	V_{CB} = -10/10V, I_E = 0, f = 1.0 MHz

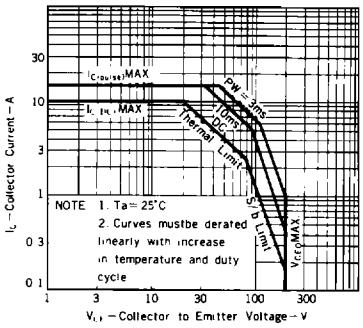
*Pulse Test PW ≤ 350μs, duty cycle ≤ 2%
h_{FE2} Classification / S : 40 − 80, R : 60 − 120, Q : 100 − 200

TYPICAL CHARACTERISTICS (Ta = 25°C)

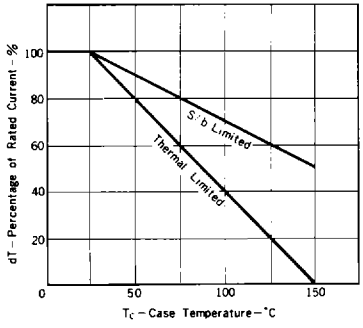
TOTAL POWER DISSIPATION vs. AMBIENT TEMPERATURE



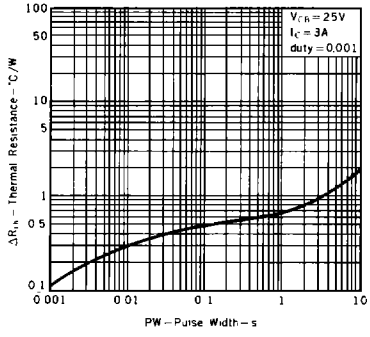
SAFE OPERATING AREAS



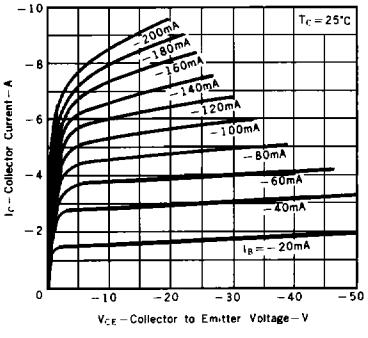
DERATING CURVES OF SAFE OPERATING AREAS



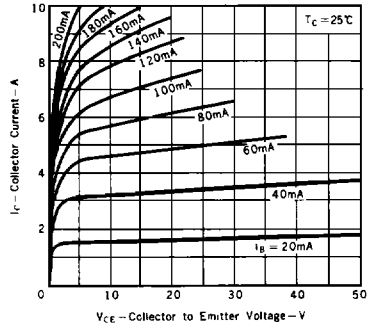
TRANSIENT THERMAL RESISTANCE



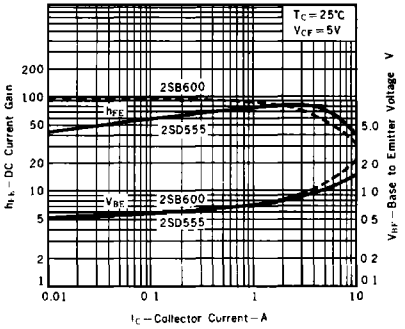
2SB600
COLLECTOR CURRENT vs. COLLECTOR TO EMITTER VOLTAGE



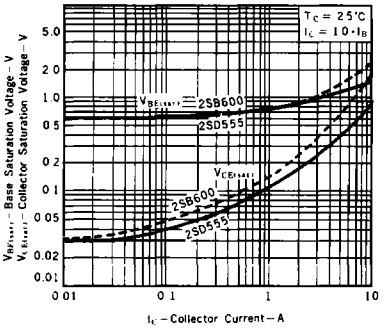
2SD555
COLLECTOR CURRENT vs. COLLECTOR TO EMITTER VOLTAGE



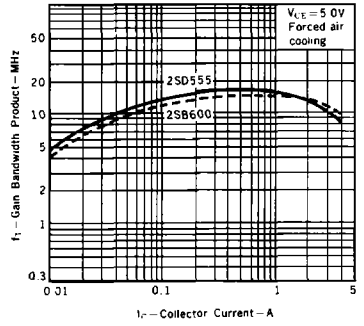
DC CURRENT GAIN AND BASE TO EMITTER VOLTAGE vs. COLLECTOR CURRENT



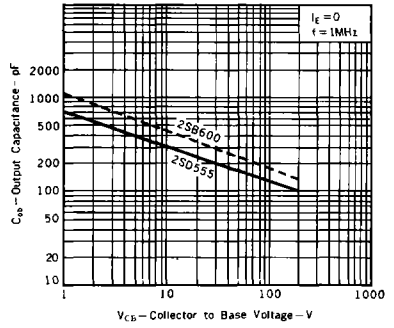
BASE AND COLLECTOR SATURATION VOLTAGE vs. COLLECTOR CURRENT



GAIN BANDWIDTH PRODUCT vs. COLLECTOR CURRENT



OUTPUT CAPACITANCE vs. COLLECTOR TO BASE VOLTAGE



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