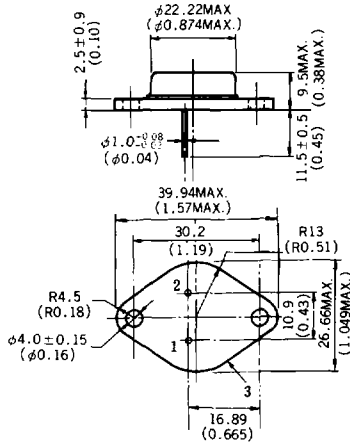


SILICON POWER TRANSISTORS 2SB541 / 2SD388

AUDIO FREQUENCY POWER AMPLIFIER PNP/NPN SILICON TRIPLE DIFFUSED MESA TRANSISTOR

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 2SB541 and 2SD388 are triple diffused mesa transistors designed for use in 40 to 50 watts complementary-symmetry audio amplifier applications.

FEATURES

- Excellent h_{FE} linearity
- Low saturation voltages
- Wide Safe Operating Area

ABSOLUTE MAXIMUM RATINGS

	2SB541	2SD388	
Maximum Voltages and Currents ($T_a=25^\circ\text{C}$)			
Collector to Base Voltage	V_{CB0}	-110	150 V
Collector to Emitter Voltage	V_{CE0}	-100	100 V
Emitter to Base Voltage	V_{EB0}	-6.0	7.0 V
Collector Current	$I_{C(DC)}$	-8	8 A
Collector Current	$I_{C(pulse)^*}$	-12	12 A
Maximum Power Dissipation			
Total Power Dissipation	$P_T(T_c=25^\circ\text{C})$	80	W
Maximum Temperatures			
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

* $PW \leq 10\text{ms}$, duty cycle $\leq 50\%$

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

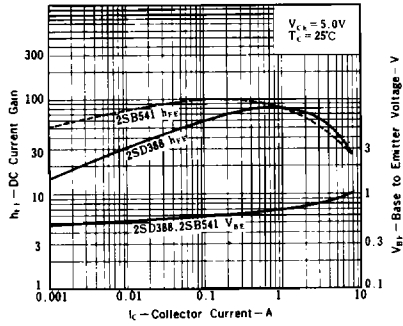
2SB541/2SD388

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Collector Cutoff Current	I_{CB0}			-100/100	μA	$V_{CB} = 100\text{V}$, $I_E = 0$
Emitter Cutoff Current	I_{EB0}			-100/100	μA	$V_{EB} = -4.0\text{V}/5.0\text{V}$, $I_C = 0$
DC Current Gain	h_{FE1}	40	80	200		$V_{CE} = 5.0\text{V}$, $I_C = 1.0\text{A}^*$
	h_{FE2}	20	40			$V_{CE} = 5.0\text{V}$, $I_C = 4.0\text{A}^*$
Collector Saturation Voltage	$V_{CE(sat)}$		-1.1/1.0	-2.0/2.0	V	$I_C = 5.0\text{A}$, $I_B = 1.0\text{A}^*$
Base Saturation Voltage	$V_{BE(sat)}$		-1.2/1.1	-2.0/2.0	V	$I_C = 5.0\text{A}$, $I_B = 1.0\text{A}^*$
Gain Bandwidth Product	f_T		7/9		MHz	$V_{CE} = 10\text{V}$, $I_C = 0.2\text{A}$
Output Capacitance	C_{ob}		320/190		pF	$V_{CB} = 10\text{V}$, $I_E = 0$, $f = 1.0\text{MHz}$

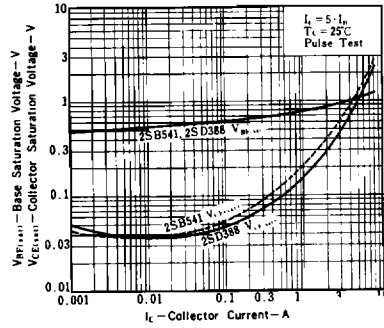
*Pulse Test $PW \leq 350\mu\text{s}$, duty cycle $\leq 2\%$

h_{FE1} Classification / S: 40 - 80 R: 60 - 120 Q: 100 - 200

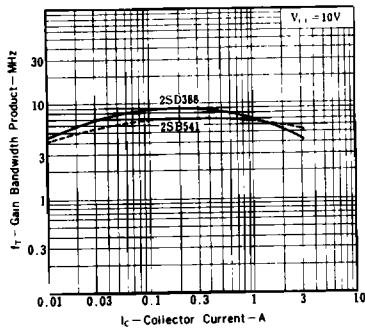
DC CURRENT GAIN, BASE TO EMITTER VOLTAGE vs. COLLECTOR CURRENT



BASE AND COLLECTOR SATURATION VOLTAGE vs. COLLECTOR CURRENT



GAIN BANDWIDTH PRODUCT vs. COLLECTOR CURRENT



OUTPUT CAPACITANCE vs. COLLECTOR TO BASE VOLTAGE

