2N456A (GERMANIUM)
2N457A
2N458A

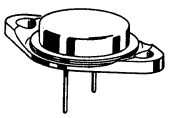
PNP GERMANIUM POWER TRANSISTORS

. . . designed for general-purpose power amplifier and switching applications.

- High DC Current Gain –
  h_{FE} = 30-90 @ I_C = 5.0 Adc
- Low Collector-Emitter Saturation Voltage –
  $V_{CE(sat)}$ = 0.5 Vdc (Max) @ I_C = 5.0 Adc

7 AMPERE
POWER TRANSISTORS
PNP GERMANIUM

40-60-80 VOLTS
85 WATTS

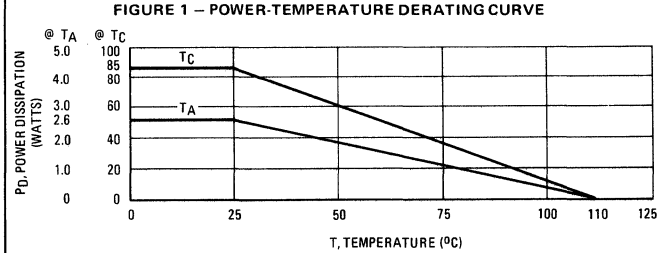


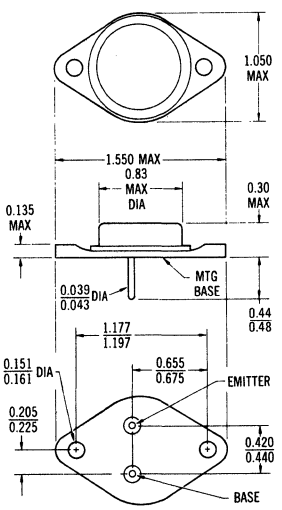
*MAXIMUM RATINGS

Rating	Symbol	2N456A	2N457A	2N458A	Unit
Collector-Emitter Voltage	V_{CEO}	20	30	40	Volts
Collector-Base Voltage	V_{CB}	40	60	80	Volts
Emitter-Base Voltage	V_{EB}	←	20	→	Volts
Collector Current	I_C	←	7.0	→	Adc
Base Current	I_B	←	3.0	→	Adc
Total Device Dissipation @ T_C = 25°C Derate above 25°C	P_D	←	85 1.0	→	Watts W/°C
Operating and Storage Junction Temperature Range	T_J,T_{stg}	←	-65 to +110	→	°C

*Indicates JEDEC Registered Data.

FIGURE 1 – POWER-TEMPERATURE DERATING CURVE





CASE 11
TO-3

COLLECTOR CONNECTED TO CASE

*ELECTRICAL CHARACTERISTICS (T_C = 25°C unless otherwise noted)

Characteristic		Symbol	Min	Max	Unit
OFF CHARACTERISTICS					
Collector-Emitter Breakdown Voltage		BV_{CEO}			Vdc
(I_C = 200 mAdc, I_B = 0)	2N456A		20	–	
	2N457A		30	–	
	2N458A		40	–	
Collector-Base Cutoff Current		I_{CBO}			mAdc
(V_{CB} = 20 Vdc, I_E = 0)	2N456A		–	0.5	
(V_{CB} = 30 Vdc, I_E = 0)	2N457A		–	0.5	
(V_{CB} = 40 Vdc, I_E = 0)	2N458A		–	0.5	
(V_{CB} = 40 Vdc, I_E = 0)	2N456A		–	2.0	
(V_{CB} = 60 Vdc, I_E = 0)	2N457A		–	2.0	
(V_{CB} = 80 Vdc, I_E = 0)	2N458A		–	2.0	
(V_{CB} = 40 Vdc, I_E = 0, T_C = +71°C)	2N456A		–	10	
(V_{CB} = 60 Vdc, I_E = 0, T_C = +71°C)	2N457A		–	10	
(V_{CB} = 80 Vdc, I_E = 0, T_C = +71°C)	2N458A		–	10	
Emitter-Base Cutoff Current		I_{EBO}	–	2.0	mAdc
(V_{EB} = 20 Vdc, I_C = 0)					
ON CHARACTERISTICS					
DC Current Gain		h_{FE}			–
(I_C = 1.0 Adc, V_{CE} = 1.5 Vdc)			40	–	
(I_C = 3.0 Adc, V_{CE} = 1.5 Vdc)			35	–	
(I_C = 5.0 Adc, V_{CE} = 1.5 Vdc)			30	90	
(I_C = 7.0 Adc, V_{CE} = 1.5 Vdc)			22	–	
Collector-Emitter Saturation Voltage		$V_{CE(sat)}$	–	0.5	Vdc
(I_C = 5.0 Adc, I_B = 500 mAdc)					
Base-Emitter Voltage		V_{BE}	–	1.5	Vdc
(I_C = 5.0 Adc, V_{CE} = 1.5 Vdc)					
DYNAMIC CHARACTERISTICS					
Current-Gain—Bandwidth Product		f_T	200	–	kHz
(I_C = 1.0 Adc, V_{CE} = 2.0 Vdc)					
Input Impedance		h_{ie}	–	28	Ohms
(I_C = 5.0 Adc, V_{CE} = 1.5 Vdc)					

*Indicates JEDEC Registered Data.

2N459, A (GERMANIUM)

For Specifications, See 2N378 Data.