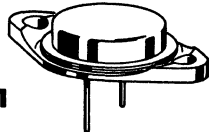


2N178 (GERMANIUM)
2N554
2N555



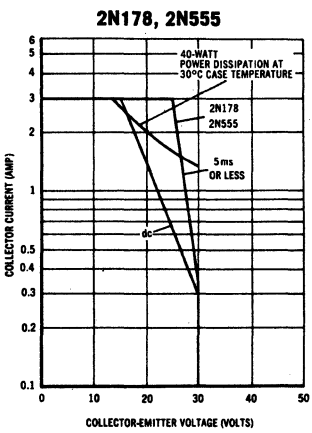
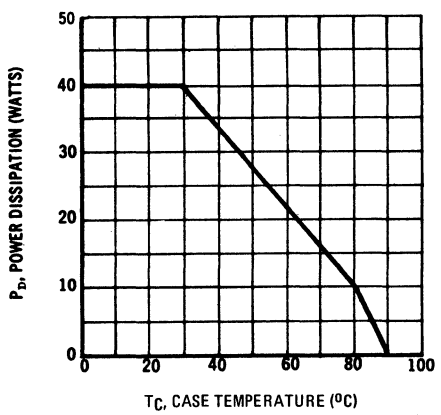
CASE 11
(TO-3)

PNP germanium power transistor for non-critical power amplifier and power switching applications requiring economical components.

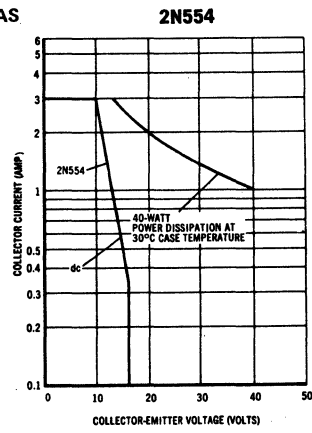
MAXIMUM RATINGS

Rating	Symbol	2N178	2N554	2N555	Unit
Collector-Emitter Voltage	V_{CER}	30	16	30	Vdc
Collector-Base Voltage	V_{CB}	30	15	30	Vdc
Emitter-Base Voltage	V_{EB}	20	15	15	Vdc
Collector Current	I_C	3.0			Adc
Total Device Dissipation @ $T_C = 80^{\circ}C$	P_D	10			Watts
Operating and Storage Junction Temperature Range	T_J, T_{stg}	-40 to +90			$^{\circ}C$

POWER-TEMPERATURE DERATING CURVE



SAFE OPERATING AREAS



The Safe Operating Area Curves indicate $I_C - V_{CE}$ limits below which the device will not go into secondary breakdown. Collector load lines for specific circuits must fall within the applicable Safe Area to avoid causing a collector-emitter short.

(Duty cycle of the excursions make no significant change in these safe areas.) To insure operation below the maximum T_J , the power-temperature derating curve must be observed for both steady state and pulse power conditions.

2N178, 2N554, 2N555 (continued)

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

Characteristic	Symbol	Min	Typ	Max	Unit
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OFF CHARACTERISTICS

Collector-Emitter Breakdown Voltage (I _C = 330 mA, R _{BE} = 10Ω)	2N178 2N554 2N555	BV _{CE}	30 16 30	- - -	- - -	Vdc
Collector-Base Cutoff Current (V _{CB} = 2.0 Vdc, I _E = 0)	2N178	I _{CBO}	-	0.05	-	mA
(V _{CB} = 30 Vdc, I _E = 0)	2N178		-	-	3.0	
(V _{CB} = 15 Vdc, I _E = 0)	2N554		-	-	10.0	
(V _{CB} = 30 Vdc, I _E = 0)	2N555		-	-	20.0	
(V _{CB} = 30 Vdc, I _E = 0, T _C = 90°C)	2N178		-	-	20.0	
Emitter-Base Cutoff Current (V _{BE} = 10 Vdc, I _C = 0)	2N178	I _{EBO}	-	-	2.0	mA

ON CHARACTERISTICS

DC Current Gain (I _C = 0.5 Adc, V _{CE} = 2.0 Vdc)	2N178 2N554 2N555	h _{FE}	15 - -	- 50 50	45 - -	-
Collector-Emitter Saturation Voltage (I _C = 3.0 Adc, I _B = 300 mA)		V _{CE(sat)}	-	0.6	-	Vdc

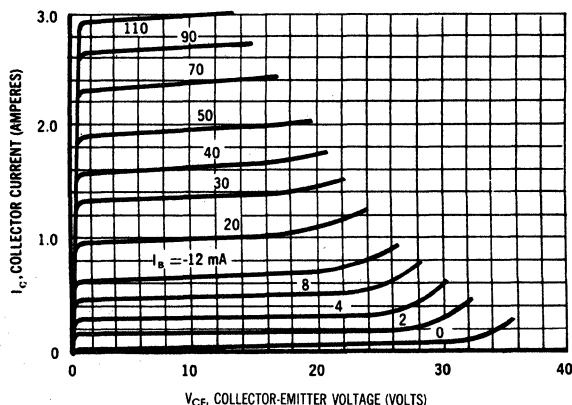
SMALL-SIGNAL CHARACTERISTICS

Common-Emitter Cutoff Frequency (I _C = 0.5 Adc, V _{CE} = 12 Vdc, f = 1.0 kHz ref)	2N178 2N554 2N555	f _{oe}	5.0 - -	- 6.0 6.0	- - -	kHz
Small-Signal Current Gain (I _C = 0.5 Adc, V _{CE} = 2.0 Vdc, f = 1.0 kHz ref)	2N178 2N554 2N555	h _{ie}	- - -	30 55 55	- - -	-
Input Impedance (I _C = 0.5 Adc, V _{CE} = 2.0 Vdc, f = 1.0 kHz)	2N178 2N554 2N555	h _{ie}	8.0 - -	25 25 25	- - -	Ohms

FUNCTIONAL TESTS

Power Gain (V _{CE} = 12 Vdc, I _C = 0.5 Adc, P _{out} = 2.0 Watts, f = 1.0 kHz, R _S = 10 Ohms, R _L = 26.6 Ohms)	2N178 2N554 2N555	G _{PE}	28 20 25	- 35 35	33 - -	dB
Total Harmonic Distortion (Under same conditions as power gain)	2N178		-	-	5.0	%

COLLECTOR CHARACTERISTICS



INPUT CURRENT versus INPUT DRIVE VOLTAGE

