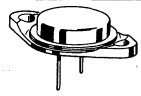
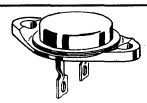
2N2526 (GERMANIUM)
2N2527
2N2528

PNIP germanium power transistors for high-voltage power switching applications.



CASE 11A
(TO-3 modified)



CASE 4-04
(TO-41)

For units with solder lugs attached, specify devices MP2526 etc. (TO-41 package)

MAXIMUM RATINGS

Rating	Symbol	2N2526	2N2527	2N2528	Unit
Collector-Emitter Voltage	V_{CE}	80	120	160	Vdc
Collector-Base	V_{CB}	80	120	160	Vdc
Emitter-Base Voltage	V_{EB}	5.0			Vdc
Collector Current - Continuous	I_C	10			Adc
Base Current	I_B	5.0			Adc
Emitter Reverse Current (Surge 60 Hz Recurrent)	I_E	1.5			Adc
Total Device Dissipation @ $T_C = 25°C$	P_D	85			Watts
Operating and Storage Junction Temperature Range	T_J, T_{stg}	-65 to +110			°C

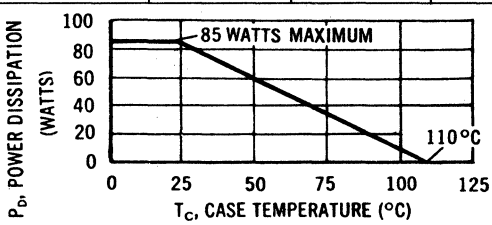
THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Case	θ_{JC}	1.0	°C/W

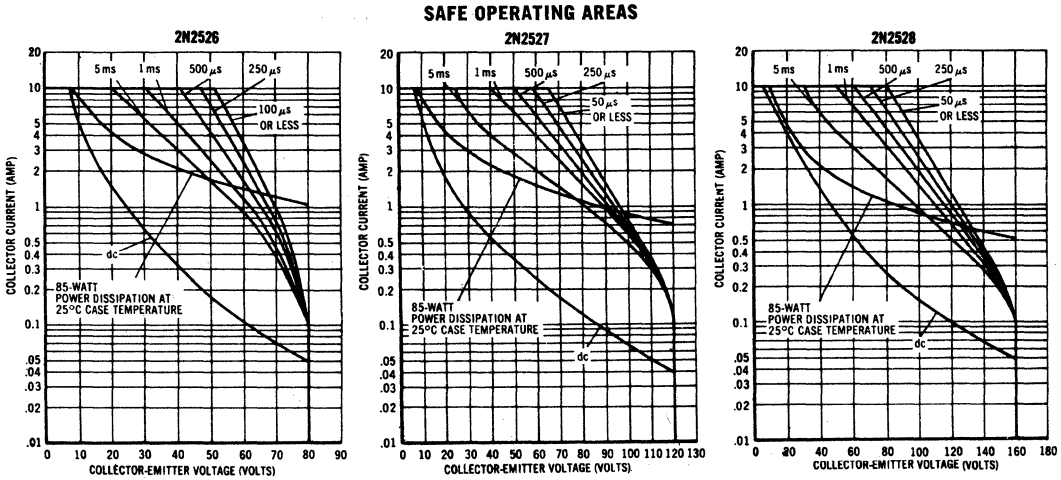
POWER-TEMPERATURE DERATING CURVE

The maximum continuous power is related to maximum junction temperature by the thermal resistance factor. This curve has a value of 85 watts at a case temperature of 25°C and is 0 watts at 110°C with a linear relation between the two temperatures such that:

$$\text{Allowable } P_D = \frac{110° - T_C}{1.0} \text{ Watts}$$



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.

2N2526 thru 2N2528 (continued)

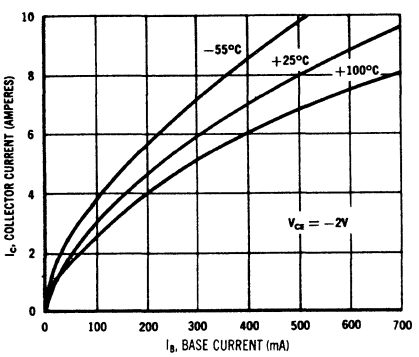
ELECTRICAL CHARACTERISTICS (T_C = 25°C unless otherwise noted)

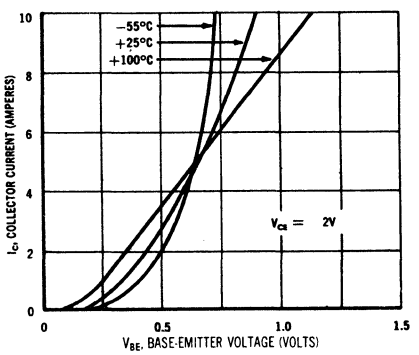
Characteristic		Symbol	Min	Typ	Max	Unit
OFF CHARACTERISTICS						
Collector-Emitter Sustaining Voltage* (I_C = 100 mAdc, I_B = 0)	2N2526	$BV_{CEO(sus)}$*	80	-	-	Volts
	2N2527		120	-	-	
	2N2528		160	-	-	
Emitter-Base Breakdown Voltage (I_E = 50 mAdc, I_C = 0)		BV_{EBO}	5.0	-	-	Vdc
Collector Cutoff Current*		I_{CEX}*				mAdc
(V_{CE} = 80 Vdc, $V_{BE(off)}$ = 0.2 Vdc, T_C = 100°C)	2N2526		-	-	35	
(V_{CE} = 120 Vdc, $V_{BE(off)}$ = 0.2 Vdc, T_C = 100°C)	2N2527		-	-	35	
(V_{CE} = 160 Vdc, $V_{BE(off)}$ = 0.2 Vdc, T_C = 100°C)	2N2528		-	-	35	
Collector-Emitter Cutoff Current		I_{CER}				mAdc
(V_{CE} = 80 Vdc, R_{BE} = 100 ohms)	2N2526		-	-	25	
(V_{CE} = 120 Vdc, R_{BE} = 100 ohms)	2N2527		-	-	25	
(V_{CE} = 160 Vdc, R_{BE} = 100 ohms)	2N2528		-	-	25	
Collector Cutoff Current		I_{CBO}				mAdc
(V_{CB} = 80 Vdc, I_E = 0)	2N2526		-	-	3.0	
(V_{CB} = 120 Vdc, I_E = 0)	2N2527		-	-	3.0	
(V_{CB} = 160 Vdc, I_E = 0)	2N2528		-	-	3.0	
(V_{CB} = 2.0 Vdc, I_E = 0)			-	-	150	μAdc
ON CHARACTERISTICS						
DC Current Gain (I_C = 3.0 Adc, V_{CE} = 2.0 Vdc)		h_{FE}	20	-	50	-
DC Transconductance (I_C = 3.0 Adc, V_{CE} = 2.0 Vdc)		g_{FE}	4.0	6.0	-	mhos
Collector-Emitter Saturation Voltage (I_C = 10 Adc, I_B = 1.0 Adc)		$V_{CE(sat)}$	-	0.5	0.8	Vdc
Base-Emitter Saturation Voltage (I_C = 10 Adc, I_B = 1.0 Adc)		$V_{BE(sat)}$	-	0.8	1.2	Vdc
DYNAMIC CHARACTERISTICS						
Small-Signal Current Gain (I_C = 0.5 Adc, V_{CE} = 12 Vdc, f = 30 kHz)		h_{fe}	10	15	-	-
Rise Time		t_r	-	5.5	-	μs
Storage Time		t_s	-	1.2	-	μs
Fall Time		t_f	-	2.0	-	μs

*To avoid excessive heating of collector junction, perform this test with a sweep method.

TYPICAL INPUT CHARACTERISTICS

COLLECTOR CURRENT versus BASE CURRENT — ALL TYPES — **COLLECTOR CURRENT versus DRIVE VOLTAGE**

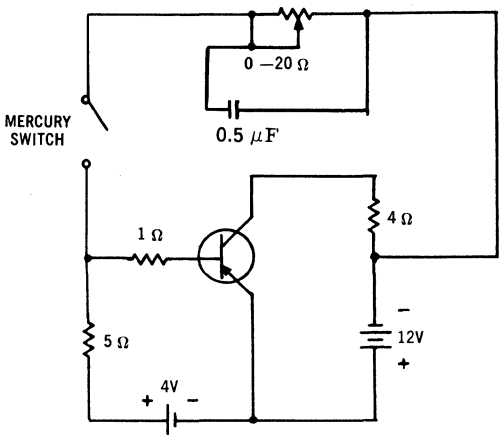




2N2526 thru 2N2528 (continued)

SWITCHING TEST CIRCUIT

PULSE CONDITIONS ; $I_C = 3$ Adc, $I_B = 300$ mAdc



DC CURRENT GAIN versus COLLECTOR CURRENT