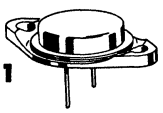
2N350A (GERMANIUM)
2N351A

2N376A



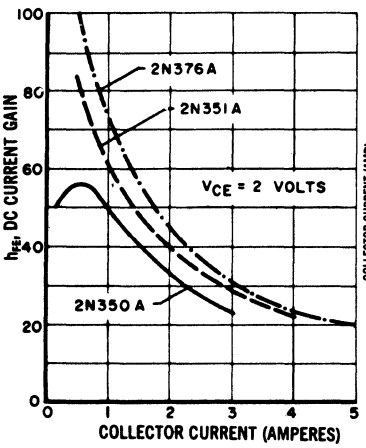
CASE 11
(TO-3)

PNP germanium power transistors for economical power switching applications and for power amplifiers requiring up to 4 watts of output power at relatively low distortion.

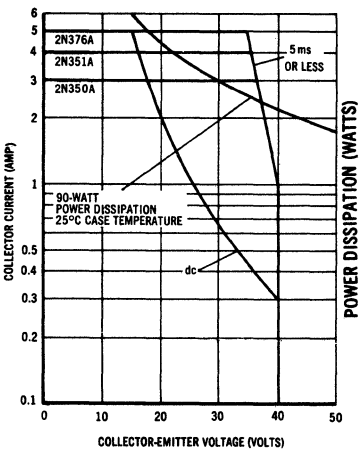
MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector-Base Voltage	V_{CB}	50	Vdc
Collector-Emitter Voltage	V_{CES}	40	Vdc
Collector Dissipation at 25°C mounting base temperature	P_D	90	Watts
Collector Junction Temperature	T_J	−65 to +100	°C
Thermal Resistance (Junction to Case)	θ_{JC}	0.8	°C/W

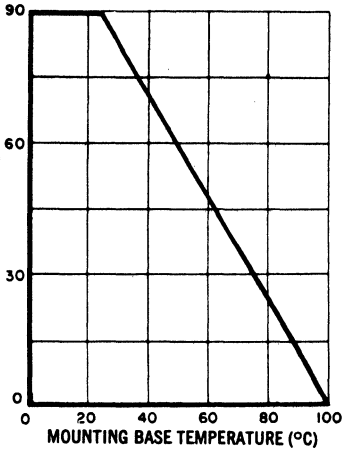
CURRENT GAIN versus COLLECTOR CURRENT (COMMON EMITTER)



SAFE OPERATING AREAS



POWER TEMPERATURE DERATING CURVE



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.

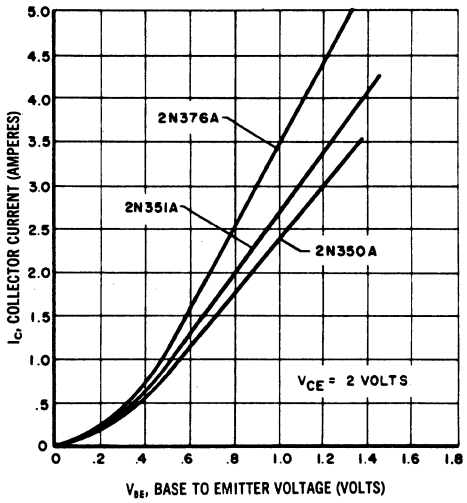
ELECTRICAL CHARACTERISTICS (at mounting base temperature 25°C ± 3°C.)

GENERAL	Symbol	Minimum	Typical	Maximum	Unit
Collector Cutoff Current	I_{CBO}				
V_{CB} = 30 V		—	—	3.0	mA
V_{CB} = 2 V		—	50	—	μA
V_{CB} = 30 V, T = 100°C		—	—	30	mA
Emitter Cutoff Current V_{EB} = 10 V	I_{EBO}	—	—	2.0	mA
Collector Breakdown Voltage I_C = 1 A (R_{BE} = 10Ω) I_C = 330 mA, R_{BE} = 0 (This test should be made under dynamic conditions only)	BV_{CES}	40	—	—	Vdc

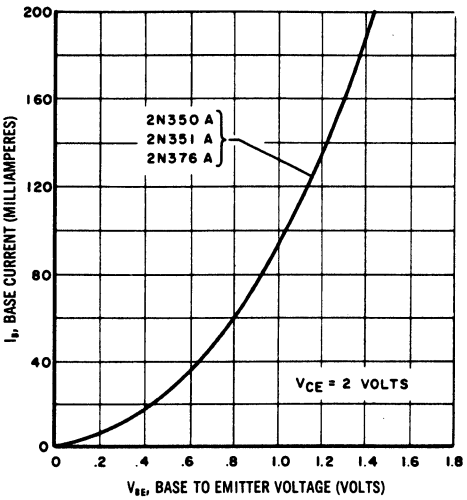
ELECTRICAL CHARACTERISTICS (at mounting base temperature 25°C ± 3°C.)

COMMON EMITTER		2N350A			2N351A			2N376A			Unit
	Sym	Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	
Power Gain (± 0.5 db) P_{out} = 4 Watts, V_{CE} = 12 V, I_C = 0.7 A, f = 1 kHz	G_{PE}	30	—	33	32	—	35	34	—	37	dB
Total Harmonic Distortion under same conditions as power gain		—	—	7.0	—	—	7.0	—	—	7.0	%
DC Forward Current Gain V_{CE} = 2 V, I_C = 0.7 A	h_{FE}	20	—	60	25	—	90	35	—	120	
Current Gain Frequency Cutoff V_{CE} = 12 V, I_C = 0.7 A, f = 1 kHz ref	$f_{\alpha e}$	5.0	—	—	5.0	—	—	5.0	—	—	kHz
Small-Signal Forward Current Gain f = 1 kHz, V_{CE} = 2 V, I_C = 0.7 A	h_{fe}	—	30	—	—	45	—	—	60	—	
Small-Signal Input Impedance f = 1 kHz, V_{CE} = 2 V, I_C = 0.7 A	h_{ie}	5.0	—	17	6.0	—	20	7.0	—	25	Ohms
Collector Saturation Voltage I_C = 3 A, I_B = 300 mA	$V_{CE(SAT)}$	—	0.8	1.75	—	—	—	—	—	—	Vdc
Base-Emitter Voltage I_C = 3 A, I_B = 300 mA	V_{BE}	—	1.0	2.00	—	—	—	—	—	—	Vdc
Collector Saturation Voltage I_C = 4 A, I_B = 400 mA	$V_{CE(SAT)}$	—	—	—	—	0.8	1.75	—	—	—	Vdc
Base-Emitter Voltage I_C = 4 A, I_B = 400 mA	V_{BE}	—	—	—	—	1.0	2.00	—	—	—	Vdc
Collector Saturation Voltage I_C = 5 A, I_B = 500 mA	$V_{CE(SAT)}$	—	—	—	—	—	—	—	0.8	1.75	Vdc
Base-Emitter Voltage I_C = 5 A, I_B = 500 mA	V_{BE}	—	—	—	—	—	—	—	1.0	2.00	Vdc

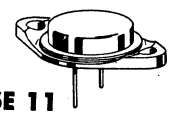
OUTPUT CURRENT versus EMITTER-DRIVE VOLTAGE



INPUT CURRENT versus EMITTER-DRIVE VOLTAGE



2N375 (GERMANIUM)
2N618
2N1359
2N1360
2N1362 thru 2N1365



CASE 11
(TO-3)

PNP germanium power transistors for general purpose switching and amplifier applications.

MAXIMUM RATINGS

Rating	Symbol	2N1359 2N1360	2N375 2N618	2N1362 2N1363	2N1364 2N1365	Unit
Collector-Emitter Voltage	V_{CES}	40	60	75	100	Vdc
Collector-Base Voltage	V_{CB}	50	80	100	120	Vdc
Emitter-Base Voltage	V_{EB}	25	40	50	60	Vdc
Collector Current-Continuous Peak	I_C	3.0 10				Adc
Total Device Dissipation @ T_C = 25°C Derate above 25°C	P_D	106 1.25				Watts W/°C
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}	0.8	°C/W