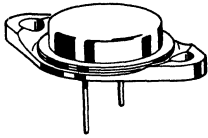


2N1011 (GERMANIUM)



CASE 11
(TO-3)

PNP germanium power transistor for general purpose power amplifier and switching applications in military and industrial equipment. Operating temperature range and power dissipation exceed military specifications.

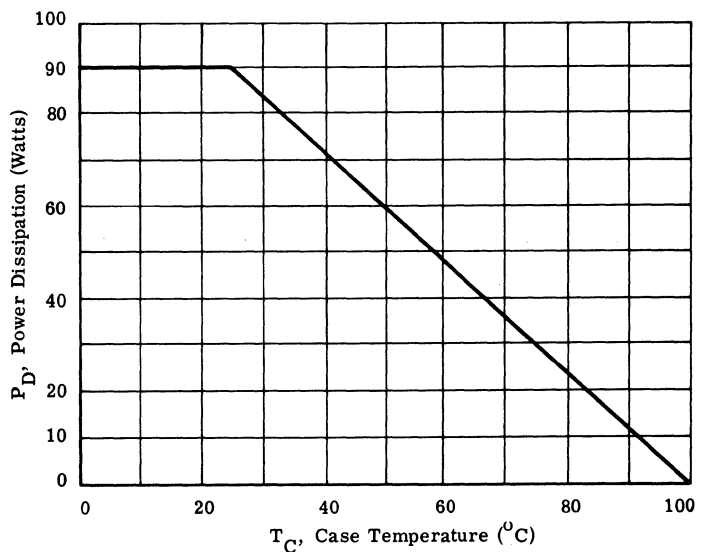
MAXIMUM RATINGS

Rating	Symbol	2N1011	Unit
Collector-Emitter Voltage	V_{CEO}	40	Vdc
Collector-Emitter Voltage	V_{CES}	80	Vdc
Collector-Base Voltage	V_{CB}	80	Vdc
Emitter-Base Voltage	V_{EB}	40	Vdc
Collector Current	I_C	5.0	Adc
Total Device Dissipation @ $T_C = 25^{\circ}\text{C}$ Derate above 25°C	P_D	90 1.2	Watts $\text{W}/^{\circ}\text{C}$
Operating and Storage Junction Temperature Range	T_J, T_{stg}	-65 to +100	$^{\circ}\text{C}$

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Case	θ_{JC}	0.8	$^{\circ}\text{C}/\text{W}$

**POWER-TEMPERATURE
DERATING CURVE**



2N1011 (continued)

ELECTRICAL CHARACTERISTICS ($T_C = 25^\circ\text{C}$ unless otherwise noted).

Characteristic	Symbol	Minimum	Maximum	Unit
DC Current Transfer Ratio $V_{CE} = 2\text{ V}$ $I_C = 1.0\text{ Adc}$	h_{FE}	—	150	—
DC Current Transfer Ratio $V_{CE} = 2\text{ V}$ $I_C = 3.0\text{ Adc}$	h_{FE}	30	75	—
Small-Signal Current Transfer Ratio Cutoff Frequency $V_{CE} = 2\text{ Vdc}$ $I_C = 3\text{ Amp}$	$f_{\alpha e}$	5.0	—	kHz
Emitter-Base Cutoff Current $V_{EB} = 40\text{ Vdc}$ $I_C = 0$	I_{EBO}	—	3.0	mAdc
Collector-Base Cutoff Current $V_{CB} = 2\text{ Vdc}$ $I_E = 0$	I_{CBO}	—	200	μAdc
Collector-Base Cutoff Current $V_{CB} = 80\text{ Vdc}$ $I_E = 0$	I_{CBO}	—	15.0	mAdc
Base Current $V_{CE} = 2\text{ Vdc}$ $I_C = 1\text{ Adc}$	I_B	6.7	—	mAdc
Base Current $V_{CE} = 2\text{ Vdc}$ $I_C = 3\text{ Adc}$	I_B	40	100	mAdc
Emitter-Base Voltage $V_{CE} = 2\text{ Vdc}$ $I_C = 3\text{ Adc}$	V_{EB}	—	2.0	Vdc
Floating Potential $V_{CB} = 50\text{ Vdc}$ (Voltmeter input resistance = 10 Megohm min)	V_{fl}	—	1.0	Vdc
Collector-Emitter Saturation Voltage $I_C = 3\text{ Adc}$ $I_B = 200\text{ mAdc}$	$V_{CE(SAT)}$	—	1.5	Vdc
Collector-Emitter Voltage $I_C = 300\text{ mAdc}$ $I_B = 0$	BV_{CEO}	40	—	Vdc
Collector-Emitter Voltage $I_C = 300\text{ mAdc}$ $V_{EB} = 0$	BV_{CES}	80	—	Vdc
High-Temperature Operation $T_C = +90^\circ\text{C min}$ Collector Cutoff Current $V_{CB} = 30\text{ Vdc}$ $I_E = 0$	I_{CBO}	—	20	mAdc