2N2490 thru 2N2493 (GERMANIUM)

CASE 5
(TO-36)

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

MAXIMUM RATINGS

Rating	Symbol	2N2490	2N2491	2N2492	2N2493	Unit
Collector-Base Voltage	V_{CB}	70	60	80	100	Volts
Collector-Emitter Voltage	V_{CES}	60	50	70	85	Volts
Emitter-Base Voltage	V_{EB}	40	30	60	80	Volts
Collector Current	I_C	15				Amp
Power Dissipation at $T_C = 25^oC$	P_D	170				Watts
Junction Temperature Range	T_J	-65 to +110				^oC

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

Characteristic		Symbol	Min	Max	Unit
Collector-Base Cutoff Current ($V_{CB} = -2$ Vdc)		I_{CBO}	—	0.2	mAdc
Emitter-Base Cutoff Current ($V_{EB} = -40$ Vdc) ($V_{EB} = -30$ Vdc) ($V_{EB} = -60$ Vdc) ($V_{EB} = -80$ Vdc)	 2N2490 2N2491 2N2492 2N2493	I_{EBO}	— — — —	 3.0 3.0 2.0 3.0	mAdc
Collector Cutoff Current ($V_{CE} = -70$ Vdc, $V_{BE} = 1.5$ Vdc) ($V_{CE} = -60$ Vdc, $V_{BE} = 1.5$ Vdc) ($V_{CE} = -80$ Vdc, $V_{BE} = 1.5$ Vdc) ($V_{CE} = -100$ Vdc, $V_{BE} = 1.5$ Vdc) ($V_{CE} = -35$ Vdc, $V_{BE} = 1.5$ Vdc, $T_C = +100^oC$) ($V_{CE} = -40$ Vdc, $V_{BE} = 1.5$ Vdc, $T_C = +100^oC$) ($V_{CE} = -50$ Vdc, $V_{BE} = 1.5$ Vdc, $T_C = +100^oC$)	 2N2490 2N2491 2N2492 2N2493 2N2490,2N2491 2N2492 2N2493	I_{CEX}	— — — — — — —	 3.0 3.0 2.0 3.0 35 35 35	mAdc
Collector-Emitter Breakdown Voltage ($I_C = 1$ A, $I_B = 0$)	 2N2490 2N2491 2N2492 2N2493	V_{CEO}	 50 40 65 75	 — — — —	Volts
Base-Emitter Voltage ($I_C = 5$ Adc, $V_{CE} = -2$ Vdc) ($I_C = 12$ Adc, $V_{CE} = -2$ Vdc)	 2N2490,2N2491 2N2492,2N2493 	V_{BE}	 — — —	 0.9 0.8 1.5	Vdc
Collector-Emitter Saturation Voltage ($I_C = 12$ Adc, $I_B = 2$ Adc)	 2N2490, 2N2491 2N2492, 2N2493	$V_{CE(sat)}$	 — —	 0.7 0.5	Vdc
DC Current Gain ($I_C = 1$ Adc, $V_{CE} = -2$ Vdc) ($I_C = 5$ Adc, $V_{CE} = -2$ Vdc) ($I_C = 5$ Adc, $V_{CE} = -2$ Vdc, $T_A = -65^oC$) ($I_C = 12$ Adc, $V_{CE} = -2$ Vdc)	 2N2490 2N2491 2N2492, 2N2493 2N2490 2N2491 2N2492, 2N2493 2N2490 2N2491 2N2492, 2N2493 2N2490 2N2491 2N2492, 2N2493	h_{FE}	 45 65 50 20 35 25 15 25 20 8 12 10	 — — — 40 70 50 — — — — — —	—
Common Emitter Cutoff Frequency ($I_C = 5$ A, $V_{CE} = -6$ V)		$f_{\alpha e}$	5.0	—	kHz
Turn-On Time ($I_C = 5$ A, $I_{B1} = I_{B2} = 0.5$ A)		t_{on}	—	25	μs
Turn-Off Time ($I_C = 5$ A, $I_{B1} = I_{B2} = 0.5$ A)		t_{off}	—	15	μs