

2N2728 (GERMANIUM)



CASE 7

PNP germanium high-current power transistors especially designed for switching and power converter circuit operating from low-voltage power sources such as solar cells, thermo-electric generators, sea cells, fuel cells, and 1.5-volt batteries.

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector-Base Voltage	V_{CB}	15	Vdc
Collector-Emitter Voltage	V_{CEO}	5.0	Vdc
Emitter-Base Voltage	V_{EB}	15	Vdc
Collector Current (continuous)	I_C	50	Adc
Base Current (continuous)	I_B	10	Adc
Total Device Dissipation @ 25°C Case Temperature	P_D	170	Watts
Operating Temperature	T_J	+110	°C
Storage Temperature	T_{stg}	-65 to +110	°C
Thermal Resistance (Junction to Case)	θ_{JC}	0.5	°C/W

2N2728 (continued)

ELECTRICAL CHARACTERISTICS

Characteristic	Symbol	Min	Typ	Max	Unit
Collector Cutoff Current $V_{CE} = 15 \text{ V}, V_{BE} = 1 \text{ V}$ $V_{CE} = 10 \text{ V}, V_{BE} = 1 \text{ V}, T_C = 100^\circ\text{C}$	I_{CEX}	-	-	10 35	mAdc
Emitter-Base Cutoff Current $V_{EB} = 15 \text{ V}$	I_{EBO}	-	-	10	mAdc
Emitter Floating Potential $V_{CB} = 15 \text{ V}, I_E = 0$	V_{EBF}	-	-	0.5	Vdc
Collector-Emitter Breakdown Voltage* $I_C = 500 \text{ mA}, I_B = 0$	BV_{CEO}	5.0	10	-	V
DC Current Transfer Ratio $I_C = 20 \text{ A}, V_{CE} = 2 \text{ V}$	h_{FE}	40	-	130	-
Collector-Emitter Saturation Voltage $I_C = 50 \text{ A}, I_B = 5 \text{ A}$	$V_{CE(sat)}$	-	0.075	0.1	Vdc
Base-Emitter Voltage $I_C = 50 \text{ A}, I_B = 5 \text{ A}$	$V_{BE(sat)}$	-	0.85	1.0	Vdc
Common Emitter Cutoff Frequency $I_C = 20 \text{ A}, V_{CE} = 2 \text{ V}$	$f_{\alpha e}$	3.0	4.5	-	kHz
Rise Time $I_C = 20 \text{ A}, V_{CC} = 1.75 \text{ V}, I_{B(on)} = 2 \text{ A}$	t_r	-	18	25	μs
Storage Time $V_{BE} = 6 \text{ V}, R_{be} = 10 \Omega$	t_s	-	15	20	μs
Fall Time $V_{BE} = 6 \text{ V}, R_{be} = 10 \Omega$	t_f	-	10	15	μs

* To avoid excessive heating of the collector junction, perform these tests with an oscilloscope.

