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2N5320

Silicon NPN Transistor

High Current, General Purpose

TO-39 Type Package

Absolute Maximum Ratings:

Collector-Emitter Voltage, V_{CEO}	75V
Collector-Base Voltage, V_{CBO}	100V
Emitter-Base Voltage, V_{EBO}	7V
Continuous Collector Current, I_C	2A
Base Current, I_B	1A
Total Device Dissipation ($T_C = +25^\circ\text{C}$), P_D	10W
Derate Above 25°C	0.057mW/ $^\circ\text{C}$
Operating Junction Temperature Range, T_J	-65° to $+200^\circ\text{C}$
Storage Temperature Range, T_{stg}	-65° to $+200^\circ\text{C}$
Thermal Resistance, Junction-to-Case, R_{thJC}	17.5 $^\circ\text{C/W}$

Electrical Characteristics: ($T_A = +25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
OFF Characteristics						
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 100\text{mA}, I_B = 0$	75	-	-	V
Collector Cutoff Current	I_{CEX}	$V_{CE} = 100\text{V}, V_{BE} = 1.5\text{V}$	-	-	0.1	mA
		$V_{CE} = 70\text{V}, V_{BE} = 1.5\text{V}, T_C = +150^\circ\text{C}$	-	-	5.0	mA
Emitter Cutoff Current	I_{EBO}	$V_{BE} = 7\text{V}, I_C = 0$	-	-	0.1	mA
ON Characteristics (Note 1)						
DC Current Gain	h_{FE}	$I_C = 500\text{mA}, V_{CE} = 4\text{V}$	30	-	130	
		$I_C = 1\text{A}, V_{CE} = 2\text{V}$	10	-	-	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 500\text{mA}, I_B = 50\text{mA}$	-	-	0.5	V
Base-Emitter ON Voltage	$V_{BE(on)}$	$I_C = 500\text{mA}, V_{CE} = 4\text{V}$	-	-	1.1	V
Small-Signal Characteristics						
Small-Signal Current Gain	h_{fe}	$I_C = 50\text{mA}, V_{CE} = 4\text{V}, f = 10\text{MHz}$	5	-	-	
Switching Characteristics						
Turn-On Time	t_{on}	$V_{CC} = 30\text{V}, I_C = 500\text{mA}, I_{B1} = 50\text{mA}$	-	-	80	ns
Turn-Off Time	t_{off}	$V_{CC} = 30\text{V}, I_C = 500\text{mA}, I_{B1} = I_{B2} = 50\text{mA}$	-	-	800	ns

Note 1. Pulse Test: Pulse Width $\leq 300\mu\text{s}$, Duty Cycle $\leq 2\%$.

