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2N4912 Silicon NPN Transistor High Voltage, Medium Power Switch TO-66 Type Package

Description:

The 2N4912 silicon NPN transistor in a TO-66 type package designed for driver circuits and switching and amplifier applications.

Features:

- Low Collector-Emmitter Saturation Voltage: $V_{CE(sat)} = 600\text{mV (Max) @ } I_C = 1\text{A}$
- Excellent safe Operating Area
- Gain Specified to $I_C = 1\text{A}$

Absolute Maximum Ratings:

Collector-Emmitter Voltage, V_{CEO}	80V
Collector-Base Voltage, V_{CBO}	80V
Emmitter-Base Voltage, V_{EBO}	5V
Collector Current, I_C	
Continuous	1A
Peak	4A
Base Current, I_B	1A
Total Power Dissipation ($T_C = +25^\circ\text{C}$), P_D	25W
Derate above 25°C	0.143W/ $^\circ\text{C}$
Operating Junction Temperature Range, T_J	-65° to $+200^\circ\text{C}$
Storage Junction Temperature Range, T_{stg}	-65° to $+200^\circ\text{C}$
Thermal Resistance, Junction-to-Case, R_{thJC}	7°C/W

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
OFF Characteristics						
Collector-Emmitter Sustaining Voltage	$V_{CEO(sus)}$	$I_C = 100\text{mA}, I_B = 0$, Note 1	80	-	-	V
Collector Cutoff Current	I_{CEO}	$V_{CE} = 40\text{V}, I_B = 0$	-	-	0.5	mA
		$V_{CE} = 80\text{V}, V_{BE(off)} = 1.5\text{V}$	-	-	0.1	mA
	$V_{CE} = 80\text{V}, V_{BE(off)} = 1.5\text{V}, T_C = +100^\circ\text{C}$	-	-	1.0	mA	
	I_{CBO}	$V_{CB} = 80\text{V}, I_E = 0$	-	-	0.1	mA
Emmitter Cutoff Current	I_{EBO}	$V_{EB} = 5\text{V}, I_C = 0$	-	-	1.0	mA

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

Electrical Characteristics (Cont'd): ($T_C = +25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
ON Characteristics (Note 1)						
DC Current Gain	h_{FE}	$I_C = 50\text{mA}, V_{CE} = 1\text{V}$	40	-	-	
		$I_C = 500\text{mA}, V_{CE} = 1\text{V}$	20	-	100	
		$I_C = 1\text{A}, V_{CE} = 1\text{V}$	10	-	-	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 1\text{A}, I_B = 100\text{mA}$	-	-	0.6	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 1\text{A}, I_B = 100\text{mA}$	-	-	1.3	V
Base-Emitter ON Voltage	$V_{BE(on)}$	$I_C = 1\text{A}, I_B = 100\text{mA}$	-	-	1.3	V
Dynamic Characteristics						
Current Gain -Bandwidth Product	f_T	$I_C = 250\text{mA}, V_{CE} = 10\text{V}, f = 1\text{MHz}$, Note 2	3	-	-	MHz
Output Capacitance	C_{ob}	$V_{CB} = 10\text{V}, I_E = 0, f = 1\text{MHz}$	-	-	100	pF
Small-Signal Current Gain	h_{fe}	$I_C = 250\text{mA}, V_{CE} = 10\text{V}, f = 1\text{kHz}$	25	-	-	

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

Note 2. $f_T = |h_{fe}| \cdot f_{test}$

