

isc Silicon NPN Power Transistor

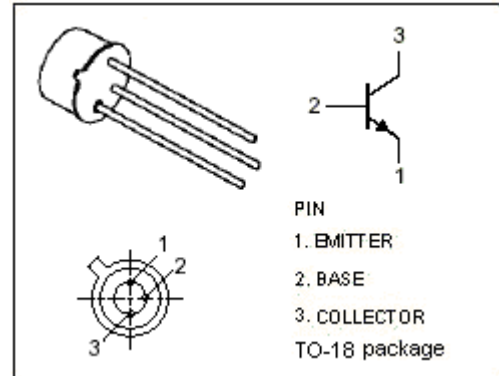
2N2222

DESCRIPTION

- Collector Current- $I_C = 0.8A$
- Collector-Emitter Breakdown Voltage-
: $V_{(BR)CEO} = 30V(\text{Min})$
- Complement to Type 2N2907

APPLICATIONS

- Designed for general-purpose switching and linear amplification.

ABSOLUTE MAXIMUM RATINGS($T_a = 25^\circ\text{C}$)

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	60	V
V_{CEO}	Collector-Emitter Voltage	30	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current-Continuous	0.8	A
I_{BM}	Base Current-Peak	0.2	A
P_C	Collector Power Dissipation@ $T_C = 25^\circ\text{C}$	0.5	W
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{stg}	Storage Temperature	-65~150	$^\circ\text{C}$

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-a}$	Thermal Resistance, Junction to Ambient	350	K/W

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ELECTRICAL CHARACTERISTICS

 $T_C=25^{\circ}\text{C}$ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	$I_C=10\text{mA}$; $I_B=0$	30		V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_E=10\text{ }\mu\text{A}$; $I_C=0$	5		V
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	$I_C=150\text{mA}$; $I_B=15\text{mA}$		0.4	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	$I_C=500\text{mA}$; $I_B=50\text{mA}$		1.6	V
$V_{BE(sat)-1}$	Base-Emitter Saturation Voltage	$I_C=150\text{mA}$; $I_B=15\text{mA}$		1.3	V
$V_{BE(sat)-2}$	Base-Emitter Saturation Voltage	$I_C=500\text{mA}$; $I_B=50\text{mA}$		2.6	V
I_{CBO}	Collector Cutoff Current	$V_{CB}=50\text{V}$; $I_E=0$		1.5	μA
I_{EBO}	Emitter Cutoff Current	$V_{EB}=5\text{V}$; $I_C=0$		50	nA
h_{FE-1}	DC Current Gain	$I_C=0.1\text{mA}$; $V_{CE}=10\text{V}$	35		
h_{FE-2}	DC Current Gain	$I_C=1\text{mA}$; $V_{CE}=10\text{V}$	50		
h_{FE-3}	DC Current Gain	$I_C=10\text{mA}$; $V_{CE}=10\text{V}$	75		
h_{FE-4}	DC Current Gain	$I_C=150\text{mA}$; $V_{CE}=10\text{V}$	100	300	
h_{FE-5}	DC Current Gain	$I_C=500\text{mA}$; $V_{CE}=10\text{V}$	30		
f_T	Current Gain-Bandwidth Product	$I_C=20\text{mA}$; $V_{CE}=20\text{V}$; $f_{test}=100\text{MHz}$	250		MHz
C_{OB}	Output Capacitance	$I_E=0$; $V_{CB}=10\text{V}$; $f_{test}=1.0\text{MHz}$		8	pF

Switching Times

t_d	Delay Time	$I_C=150\text{mA}$; $I_{B1}=-I_{B2}=15\text{mA}$		10	ns
t_r	Rise Time			25	ns
t_{stg}	Storage Time			200	ns
t_f	Fall Time			60	ns