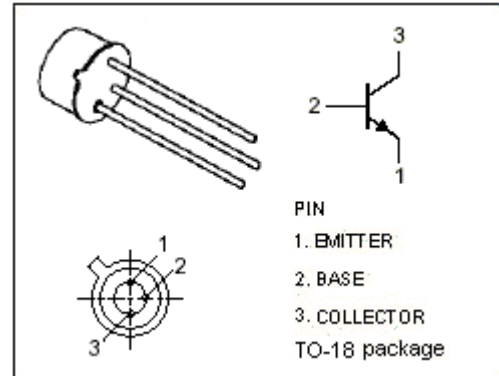


**isc Silicon NPN Power Transistor****2N2222****DESCRIPTION**

- 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

## isc Silicon NPN Power Transistor

2N2222

## 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	$I_E=10\ \mu\text{A}; I_C=0$	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	$\mu\text{A}$
$I_{EBO}$	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	$I_C=20\text{mA}; V_{CE}=20\text{V}; f_{\text{test}}=100\text{MHz}$	250		MHz
$C_{OB}$	Output Capacitance	$I_E=0; V_{CB}=10\text{V}; f_{\text{test}}=1.0\text{MHz}$		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