

isc Silicon NPN Power Transistor

2SD113

DESCRIPTION

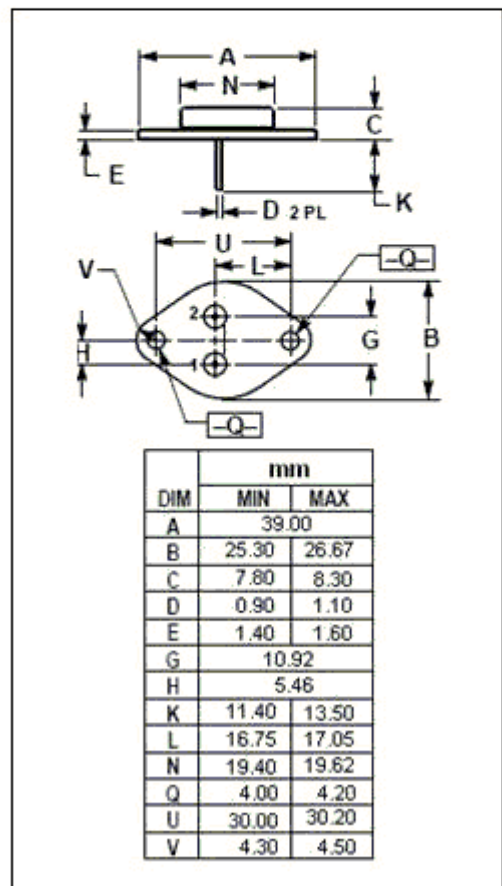
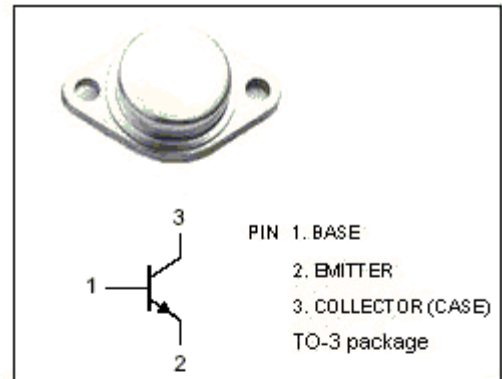
- Collector-Emitter Breakdown Voltage-  
:  $V_{(BR)CEO} = 80V$  (Min)
- High Power Dissipation
- High Current Capability

APPLICATIONS

- Audio power amplifier, power switching applications.
- DC-DC converter and regulator applications.

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

SYMBOL	PARAMETER	MAX	UNIT
$V_{CBO}$	Collector-Base Voltage	100	V
$V_{CEO}$	Collector-Emitter Voltage	80	V
$V_{EBO}$	Emitter-Base Voltage	10	V
$I_C$	Collector Current-Continuous	30	A
$I_E$	Emitter Current-Continuous	-30	A
$I_B$	Base Current-Continuous	5	A
$P_C$	Collector Power Dissipation @ $T_C=25^{\circ}C$	200	W
$T_j$	Junction Temperature	150	$^{\circ}C$
$T_{stg}$	Storage Temperature Range	-65~150	$^{\circ}C$



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## ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	$I_C=50\text{mA}; R_{BE}=\infty$	80			V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_E=50\text{mA}; I_C=0$	10			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=15\text{A}; I_B=3\text{A}$			1.5	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=15\text{A}; I_B=3\text{A}$			2.5	V
$I_{CBO}$	Collector Cutoff Current	$V_{CB}=50\text{V}; I_E=0$			2	mA
$I_{EBO}$	Emitter Cutoff Current	$V_{EB}=10\text{V}; I_C=0$			50	mA
$h_{FE-1}$	DC Current Gain	$I_C=1\text{A}; V_{CE}=5\text{V}$	50		300	
$h_{FE-2}$	DC Current Gain	$I_C=15\text{A}; V_{CE}=5\text{V}$	10			
$C_{OB}$	Output Capacitance	$I_E=0; V_{CB}=50\text{V}; f_{test}=1.0\text{MHz}$		400		pF
$f_T$	Current-Gain—Bandwidth Product	$I_C=1\text{A}; V_{CE}=10\text{V}$		1.5		MHz

◆  $h_{FE-1}$  Classifications

O	Y
50-150	100-300