

**isc Silicon NPN Power Transistor**

**2N6277**

**DESCRIPTION**

- High Switching Speed
- High DC Current Gain-  
:  $h_{FE} = 30-120 @ I_C = 20A$
- Low Collector Saturation Voltage-  
:  $V_{CE(sat)} = 1.0V(\text{Min.}) @ I_C = 20A$
- Complement to Type 2N6379

**APPLICATIONS**

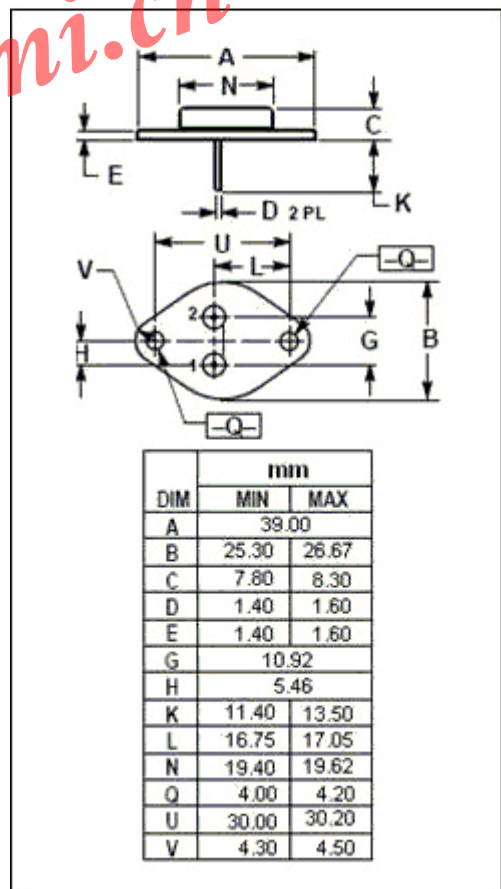
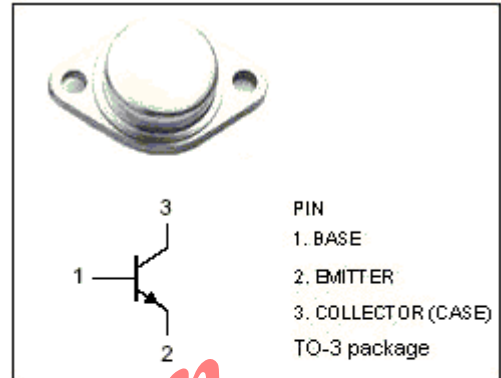
- Designed for use in industrial-military power amplifier and switching circuit applications.

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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector- Base Voltage	180	V
$V_{CEO}$	Collector-Emitter Voltage	150	V
$V_{EBO}$	Emitter-Base Voltage	6	V
$I_C$	Collector Current-Continuous	50	A
$I_{CM}$	Collector Current-Peak	100	A
$I_B$	Base Current-Continuous	20	A
$P_C$	Collector Power Dissipation @ $T_C = 25^\circ C$	250	W
$T_J$	Junction Temperature	200	$^\circ C$
$T_{stg}$	Storage Temperature Range	-65~200	$^\circ C$

**THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	0.7	$^\circ C/W$



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## ELECTRICAL CHARACTERISTICS

T<sub>j</sub>=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
V <sub>CEO(SUS)</sub>	Collector-Emitter Sustaining Voltage	I <sub>C</sub> = 50mA; I <sub>B</sub> = 0	150		V
V <sub>CE(sat)-1</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 20A; I <sub>B</sub> = 2A		1.0	V
V <sub>CE(sat)-2</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 50A; I <sub>B</sub> = 10A		3.0	V
V <sub>BE(sat)-1</sub>	Base-Emitter Saturation Voltage	I <sub>C</sub> = 20A; I <sub>B</sub> = 2A		1.8	V
V <sub>BE(sat)-2</sub>	Base-Emitter Saturation Voltage	I <sub>C</sub> = 50A; I <sub>B</sub> = 10A		3.5	V
V <sub>BE(on)</sub>	Base-Emitter On Voltage	I <sub>C</sub> = 20A; V <sub>CE</sub> = 4V		1.8	V
I <sub>CEO</sub>	Collector Cutoff Current	V <sub>CE</sub> = 75V; I <sub>B</sub> = 0		50	μ A
I <sub>CEx</sub>	Collector Cutoff Current	V <sub>CE</sub> = 180V; V <sub>BE(off)</sub> =1.5V V <sub>CE</sub> = 180V; V <sub>BE(off)</sub> =1.5V; T <sub>C</sub> =150°C		10 1.0	μ A mA
I <sub>EBO</sub>	Emitter Cutoff Current	V <sub>EB</sub> = 6V; I <sub>C</sub> = 0		0.1	mA
h <sub>FE-1</sub>	DC Current Gain	I <sub>C</sub> = 1A; V <sub>CE</sub> = 4V	50		
h <sub>FE-2</sub>	DC Current Gain	I <sub>C</sub> = 20A; V <sub>CE</sub> = 4V	30	120	
h <sub>FE-3</sub>	DC Current Gain	I <sub>C</sub> = 50A; V <sub>CE</sub> = 4V	10		
f <sub>T</sub>	Current-Gain—Bandwidth Product	I <sub>C</sub> = 1A; V <sub>CE</sub> = 10V	30		MHz
C <sub>OB</sub>	Output Capacitance	I <sub>E</sub> = 0; V <sub>CB</sub> = 10V; f <sub>test</sub> = 0.1MHz		600	pF

## Switching times

t <sub>r</sub>	Rise Time	V <sub>CC</sub> = 80V, I <sub>C</sub> = 20A, I <sub>B1</sub> = 2A, V <sub>BE(off)</sub> = 5V		0.35	μ s
t <sub>s</sub>	Storage Time	V <sub>CC</sub> = 80V, I <sub>C</sub> = 20A, I <sub>B1</sub> = -I <sub>B2</sub> = 2A		0.80	μ s
t <sub>f</sub>	Fall Time			0.25	μ s