

## isc Silicon NPN Power Transistors

## MJ15022

### DESCRIPTION

- Complement to Type PNP MJ15023
- Excellent Safe Operating Area
- High DC current Gain
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

### APPLICATIONS

- Designed for high power audio, disk head positioners and other linear applications

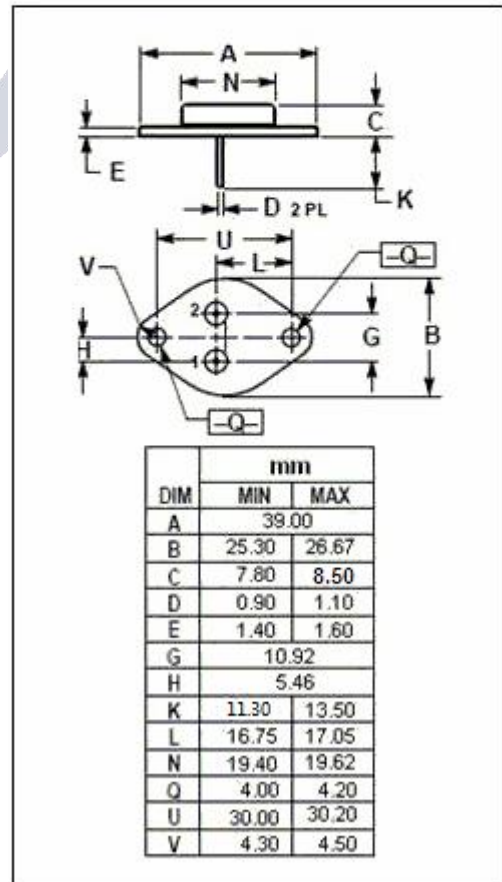
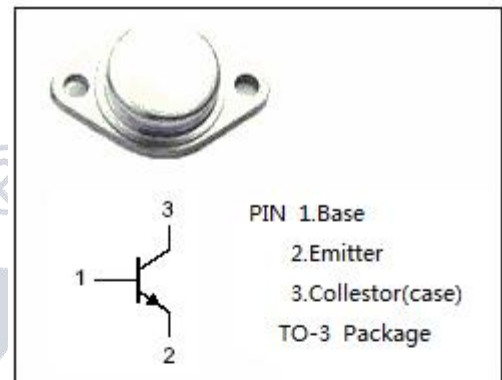
### ABSOLUTE MAXIMUM RATINGS( $T_c=25^\circ\text{C}$ )

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	350	V
$V_{CEO}$	Collector-Emitter Voltage	200	V
$V_{EBO}$	Emitter-Base Voltage	5	V
$I_C$	Collector Current-Continuous	16	A
$I_{CM}$ (1)	Collector Current-Peak	30	A
$I_B$	Base Current-Continuous	5	A
$P_D$	Total Power Dissipation @ $T_c=25^\circ\text{C}$	250	W
$T_j$	Junction Temperature	-65~200	$^\circ\text{C}$
$T_{stg}$	Storage Temperature	-65~200	$^\circ\text{C}$

### THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	0.70	$^\circ\text{C}/\text{W}$

(1) Pulse Test: Pulse Width = 5 ms, Duty Cycle \_ 10%.



**isc Silicon NPN Power Transistors****MJ15022****ELECTRICAL CHARACTERISTICS**T<sub>j</sub>=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
V <sub>CEO(SUS)</sub> (1)	Collector-Emitter Sustaining Voltage	I <sub>C</sub> = 50mA ; I <sub>B</sub> = 0	200		V
V <sub>CE(sat)-1</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 8A; I <sub>B</sub> = 0.8A		1.4	V
V <sub>CE(sat)-2</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 16A; I <sub>B</sub> = 3.2A		4.0	V
V <sub>BE(on)</sub>	Base-Emitter On Voltage	I <sub>C</sub> = 8A ; V <sub>CE</sub> = 4V		2.2	V
I <sub>CEO</sub>	Collector Cutoff Current	V <sub>CE</sub> = 150V; I <sub>B</sub> = 0		0.5	mA
I <sub>CBO</sub>	Collector Cutoff Current	V <sub>CB</sub> = 200V; I <sub>E</sub> = 0		0.25	mA
I <sub>EBO</sub>	Emitter Cutoff Current	V <sub>EB</sub> = 5V; I <sub>C</sub> =0		0.5	mA
h <sub>FE-1</sub>	DC Current Gain	I <sub>C</sub> = 8A ; V <sub>CE</sub> = 4V	15	60	
h <sub>FE-2</sub>	DC Current Gain	I <sub>C</sub> = 16A ; V <sub>CE</sub> = 4V	5		
I <sub>s/b</sub>	Second Breakdown Collector Current With Base Forward Biased	V <sub>CE</sub> = 50Vdc, t=0.5 s, Nonrepetitive V <sub>CE</sub> = 80Vdc, t=0.5 s, Nonrepetitive	5.0 2.0		A
C <sub>OB</sub>	Output Capacitance	I <sub>E</sub> = 0 ; V <sub>CB</sub> = 10V; f <sub>test</sub> = 1.0MHz	300		pF
f <sub>T</sub>	Current-Gain—Bandwidth Product	I <sub>C</sub> = 1A ; V <sub>CE</sub> = 10V; f <sub>test</sub> = 1.0MHz	4		MHz

(1) Pulse Test: Pulse Width = 300 μs, Duty Cycle \_ 2%.