

INCHANGE Semiconductor

isc Product Specification

isc Silicon NPN Power Transistor

MJ12022

DESCRIPTION

- Collector-Emitter Sustaining Voltage-
: $V_{CEO(SUS)} = 450V(\text{Min})$
- Fast Turn-Off Time

APPLICATIONS

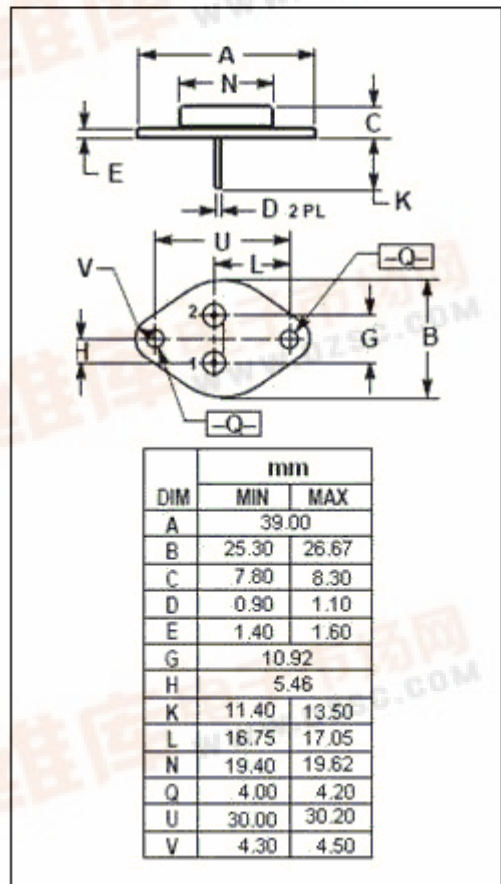
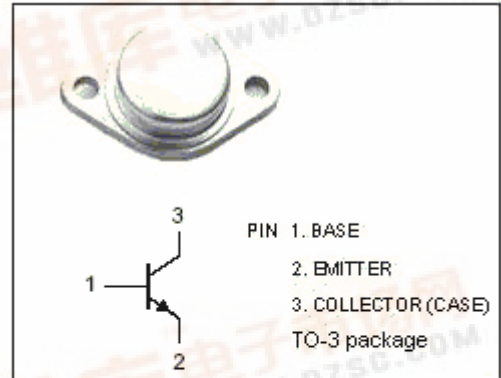
- Designed for high resolution video systems, such as : high density graphic displays, data terminals, video scanners.

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CEV}	Collector-Emitter Voltage	850	V
$V_{CEO(SUS)}$	Collector-Emitter Voltage	450	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current-Continuous	15	A
I_{CM}	Collector Current-Peak	20	A
I_B	Base Current-Continuous	10	A
I_{BM}	Base Current-Peak	15	A
P_C	Collector Power Dissipation@ $T_C=25^\circ\text{C}$	175	W
T_J	Junction Temperature	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	1.0	$^\circ\text{C/W}$



isc Silicon NPN Power Transistor**MJ12022****ELECTRICAL CHARACTERISTICS** $T_C=25^{\circ}\text{C}$ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C=100\text{mA}; I_B=0$	450			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=10\text{A}; I_B=2\text{A}$			1.2	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=10\text{A}; I_B=2\text{A}$			1.5	V
I_{CEV}	Collector Cutoff Current	$V_{CEV}=850\text{V}; V_{BE(off)}=1.5\text{V}$ $V_{CEV}=850\text{V}; V_{BE(off)}=1.5\text{V}; T_C=100^{\circ}\text{C}$			0.25 1.5	mA
I_{CER}	Collector Cutoff Current	$V_{CE}=850\text{V}; R_{BE}=50\Omega; T_C=100^{\circ}\text{C}$			2.5	mA
I_{EBO}	Emitter Cutoff Current	$V_{EB}=6\text{V}; I_C=0$			1.0	mA
h_{FE}	DC Current Gain	$I_C=15\text{A}; V_{CE}=5\text{V}$	5			
f_T	Current-Gain—Bandwidth Product	$I_C=1.3\text{A}; V_{CE}=10\text{V}; f_{test}=1\text{MHz}$	15			MHz
C_{OB}	Output Capacitance	$I_E=0; V_{CB}=10\text{V}; f_{test}=1\text{kHz}$			400	pF

Switching times; Inductive Load

t_s	Storage Time	$I_C=10\text{A}, V_{CC}=120\text{V}; I_{B1}=2\text{A};$ $PW=8\mu\text{s}; V_{BE(off)}=4\text{V}$ Duty Cycle $\leq 2.0\%$		820	1800	ns
t_f	Fall Time			100	300	ns