

isc Silicon NPN Power Transistor

MJ12020

DESCRIPTION

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

APPLICATIONS

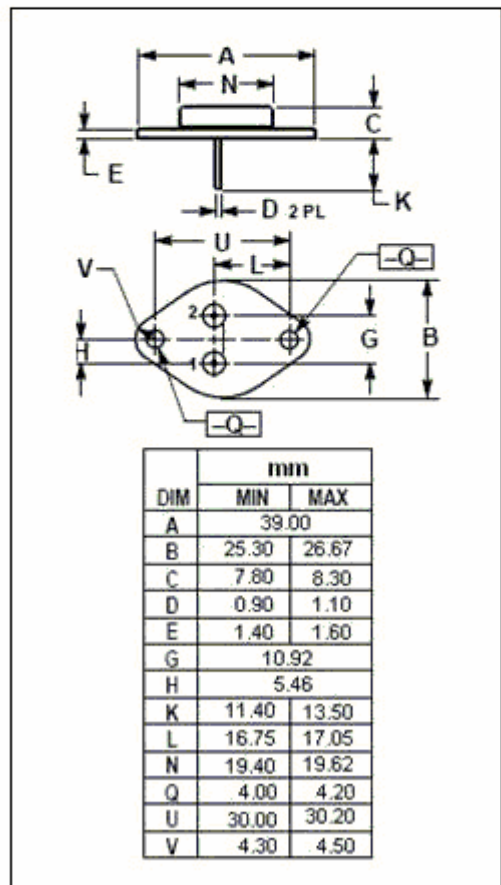
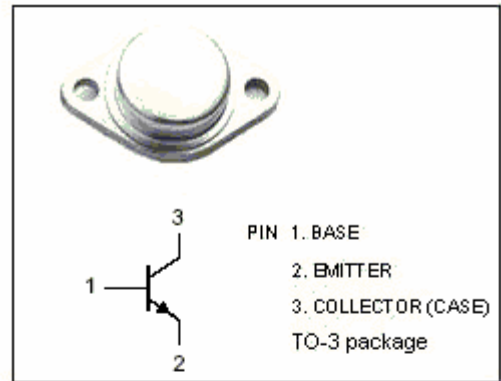
- Designed for high resolution video systems, such as : high density graphic displays, data terminals, video scanners.

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	5	A
I_{CM}	Collector Current-Peak	10	A
I_B	Base Current-Continuous	4	A
I_{BM}	Base Current-Peak	8	A
P_C	Collector Power Dissipation@ $T_C=25^\circ\text{C}$	125	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	1.4	$^\circ\text{C/W}$



isc Silicon NPN Power Transistor**MJ12020****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	$I_C= 3\text{A}; I_B= 0.6\text{A}$			1.2	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C= 3\text{A}; I_B= 0.6\text{A}$			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	$I_C= 5\text{A}; V_{CE}= 5\text{V}$	5			
f_T	Current-Gain—Bandwidth Product	$I_C= 0.3\text{A}; V_{CE}= 10\text{V}; f_{test}=1\text{MHz}$	15			MHz
C_{OB}	Output Capacitance	$I_E= 0; V_{CB}= 10\text{V}; f_{test}=1\text{kHz}$			200	pF

Switching times; Inductive Load

t_s	Storage Time	$I_C= 3\text{A}, V_{CC}= 40\text{V}; I_{B1}= 0.6\text{A};$ $PW= 8\ \mu\text{s}; V_{BE(off)}= 4\text{V}$ Duty Cycle $\leq 2.0\%$		440	1200	ns
t_f	Fall Time			130	300	ns