

**Silicon NPN Power Transistor**

**MJ12004**

**DESCRIPTION**

- Collector-Emitter Voltage-  
 $V_{CEX} = 1500V$
- Safe Operation Area
- Switching Time with Inductive Load

**APPLICATIONS**

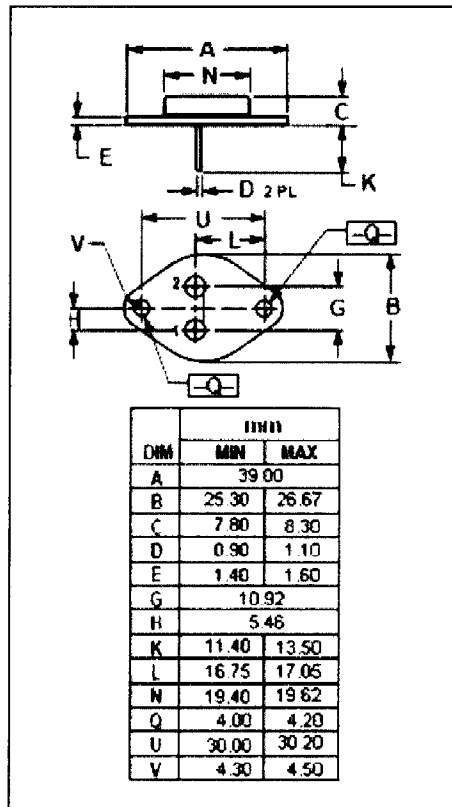
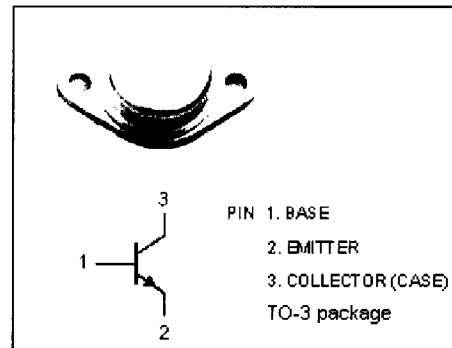
- Designed for use in large screen color deflection circuits.

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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CEX}$	Collector-Emitter Voltage	1500	V
$V_{CEO(SUS)}$	Collector-Emitter Voltage	750	V
$V_{EBO}$	Emitter-Base Voltage	5	V
$I_C$	Collector Current-Continuous	5	A
$I_B$	Base Current-Continuous	4	A
$I_E$	Emitter Current-Continuous	9	A
$P_C$	Collector Power Dissipation@ $T_C=25^{\circ}C$	100	W
$T_J$	Junction Temperature	150	$^{\circ}C$
$T_{stg}$	Storage Temperature	-65~150	$^{\circ}C$

**THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	MAX	UNIT
$R_{th j-c}$	Thermal Resistance, Junction to Case	1.25	$^{\circ}C/W$



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## MJ12004

### 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	$I_C=50\text{mA}$ ; $I_B=0$	750			V
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	$I_C=4.5\text{A}$ ; $I_B=1.8\text{A}$			5.0	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	$I_C=3.5\text{A}$ ; $I_B=1.5\text{A}$			5.0	V
$V_{BE(sat)-1}$	Base-Emitter Saturation Voltage	$I_C=4.5\text{A}$ ; $I_B=1.8\text{A}$			1.5	V
$V_{BE(sat)-2}$	Base-Emitter Saturation Voltage	$I_C=3.5\text{A}$ ; $I_B=1.5\text{A}$			1.5	V
$I_{CES}$	Collector Cutoff Current	$V_{CE}=1500\text{V}$ ; $V_{BE}=0$			1.0	mA
$I_{EBO}$	Emitter Cutoff Current	$V_{EB}=5\text{V}$ ; $I_C=0$			1.0	mA
$h_{FE}$	DC Current Gain	$I_C=0.5\text{A}$ ; $V_{CE}=5\text{V}$		12		
$f_T$	Current-Gain—Bandwidth Product	$I_C=0.1\text{A}$ ; $V_{CE}=5\text{V}$ ; $f_{test}=1.0\text{MHz}$		4		MHz
$C_{OB}$	Output Capacitance	$I_E=0$ ; $V_{CB}=10\text{V}$ ; $f_{test}=0.1\text{MHz}$		125		pF
$t_f$	Fall Time	$I_C=4.5\text{A}$ , $I_{B1}=1.8\text{A}$ ; $L_B=8\ \mu\text{H}$		0.4	1.0	$\mu\text{s}$