

# isc Silicon NPN Power Transistor

# BU109

## DESCRIPTION

- Excellent Safe Operating Area
- Collector-Emitter Saturation Voltage-  
:  $V_{CE(sat)} = 1.0 \text{ V(Max)} @ I_C = 5 \text{ A}$
- Collector-Emitter Sustaining Voltage-  
:  $V_{CEO(SUS)} = 150 \text{ V(Min)}$
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

## APPLICATIONS

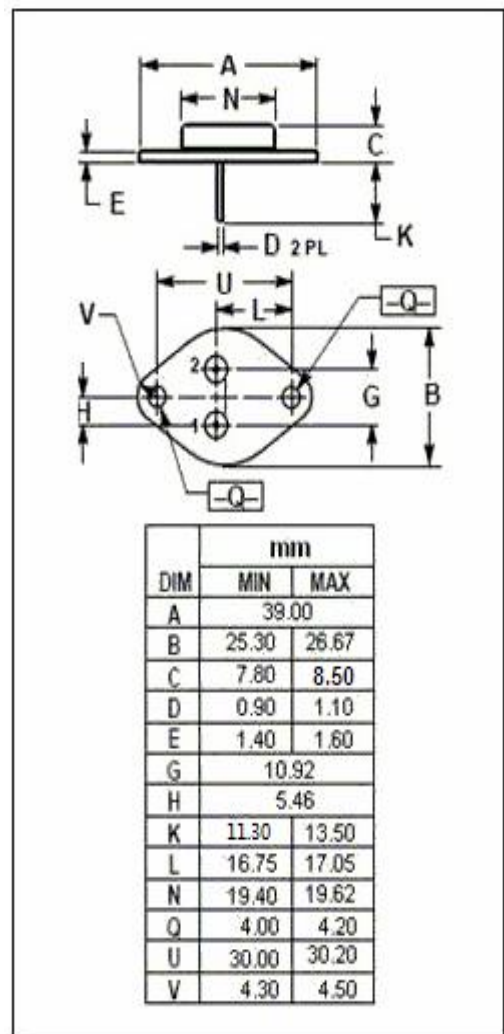
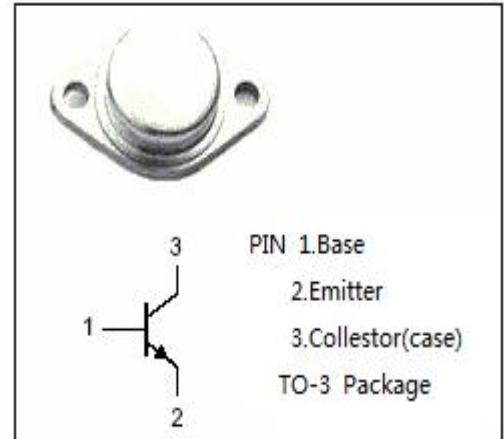
- Designed for horizontal deflection output stage of TVs and CRTs applications

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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	330	V
$V_{CEV}$	Collector-Emitter Voltage- $V_{BE} = -1.5\text{V}$	330	V
$V_{CEO}$	Collector-Emitter Voltage	150	V
$V_{EBO}$	Emitter-Base Voltage	6	V
$I_C$	Collector Current-Continuous	7	A
$I_{CM}$	Collector Current-Peak(Repetitive)	10	A
$I_{CM}$	Collector Current-Peak( $t = 10\text{ms}$ )	15	A
$I_B$	Base Current	4	A
$P_C$	Collector Power Dissipation@ $T_C = 25^\circ\text{C}$	60	W
$T_J$	Junction Temperature	150	$^\circ\text{C}$
$T_{stg}$	Storage Temperature	-65~150	$^\circ\text{C}$

## THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	2.08	$^\circ\text{C/W}$
$R_{th\ j-a}$	Thermal Resistance, Junction to Ambient	70	$^\circ\text{C/W}$



**isc Silicon NPN Power Transistor****BU109****ELECTRICAL CHARACTERISTICS** $T_C=25^\circ\text{C}$  unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C=50\text{mA}; I_B=0$	150		V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=5\text{A}; I_B=0.5\text{A}$		1.0	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=5\text{A}; I_B=0.5\text{A}$		1.2	V
$I_{CES}$	Collector Cutoff Current	$V_{CE}=330\text{V}; V_{BE}=0$ $V_{CE}=200\text{V}; V_{BE}=0$ $V_{CE}=200\text{V}; V_{BE}=0, T_C=150^\circ\text{C}$		5.0 0.1 1.0	mA
$I_{EBO}$	Emitter Cutoff Current	$V_{EB}=6\text{V}; I_C=0$		1.0	mA
$h_{FE}$	DC Current Gain	$I_C=5\text{A}; V_{CE}=1.5\text{V}$	15		
$f_T$	Current Gain-Bandwidth Product	$I_C=0.5\text{A}; V_{CE}=10\text{V}$	10		MHz
$t_{off}$	Turn-Off Time	$I_C=5\text{A}; I_B=0.5\text{A}$		0.75	$\mu\text{s}$

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