

**isc Silicon NPN Power Transistor**

**BDY39**

**DESCRIPTION**

- Excellent Safe Operating Area
- DC Current Gain-  
:  $h_{FE}=25-100@I_C = 4A$
- Collector-Emitter Saturation Voltage-  
:  $V_{CE(sat)}= 0.7V(Max)@ I_C = 4A$

**APPLICATIONS**

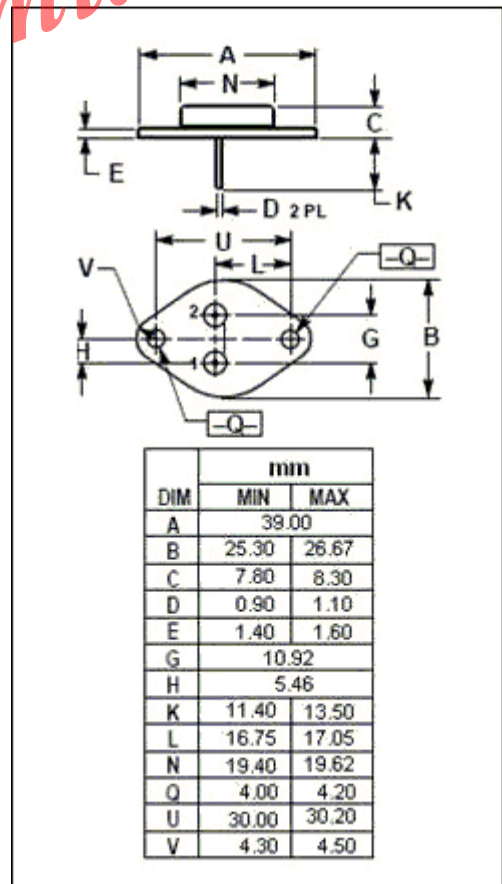
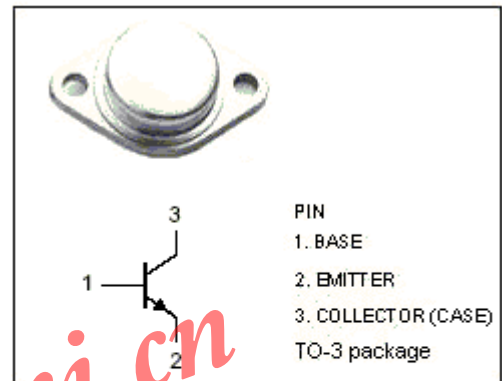
- Designed for use in high power AF output stages and in stabilized power supplies.

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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	100	V
$V_{CER}$	Collector-Emitter Voltage	70	V
$V_{CEO}$	Collector-Emitter Voltage	60	V
$V_{EBO}$	Emitter-Base Voltage	7	V
$I_C$	Collector Current-Continuous	15	A
$I_{CM}$	Collector Current-Peak	22.5	A
$I_B$	Base Current	7	A
$P_C$	Collector Power Dissipation@ $T_C=25^{\circ}C$	115	W
$T_J$	Junction Temperature	200	$^{\circ}C$
$T_{stg}$	Storage Temperature	-65~200	$^{\circ}C$

**THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	1.5	$^{\circ}C/W$



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## ELECTRICAL CHARACTERISTICS

 $T_C=25^\circ\text{C}$  unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	$I_C=200\text{mA}; I_B=0$	60		V
$V_{CEV(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C=100\text{mA}; V_{BE}=-1.5\text{V}$	100		V
$V_{CER(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C=200\text{mA}; R_{BE}=100\ \Omega$	70		V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=4\text{A}; I_B=0.4\text{A}$		0.7	V
$V_{BE(on)}$	Base-Emitter On Voltage	$I_C=4\text{A}; V_{CE}=4\text{V}$		1.1	V
$I_{CEO}$	Collector Cutoff Current	$V_{CE}=30\text{V}; I_B=0$		0.7	mA
$I_{CEV}$	Collector Cutoff Current	$V_{CE}=100\text{V}; V_{BE}=-1.5\text{V}$ $V_{CE}=60\text{V}; V_{BE}=-1.5\text{V}; T_C=150^\circ\text{C}$		1.0 5.0	mA
$I_{EBO}$	Emitter Cutoff Current	$V_{EB}=7\text{V}; I_C=0$		1.0	mA
$h_{FE}$	DC Current Gain	$I_C=4\text{A}; V_{CE}=4\text{V}$	25	100	
$f_T$	Current Gain-Bandwidth Product	$I_C=0.3\text{A}; V_{CE}=2\text{V}$	0.8		MHz