

isc Silicon PNP Darlington Power Transistor

2SB638

DESCRIPTION

- Built-in Base-Emitter Shunt Resistors
- High DC current gain-
 $h_{FE} = 1000$ (Min) @ $I_C = -5A$
- Collector-Emitter Sustaining Voltage-
 $V_{CEO(SUS)} = -100V$ (Min)
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

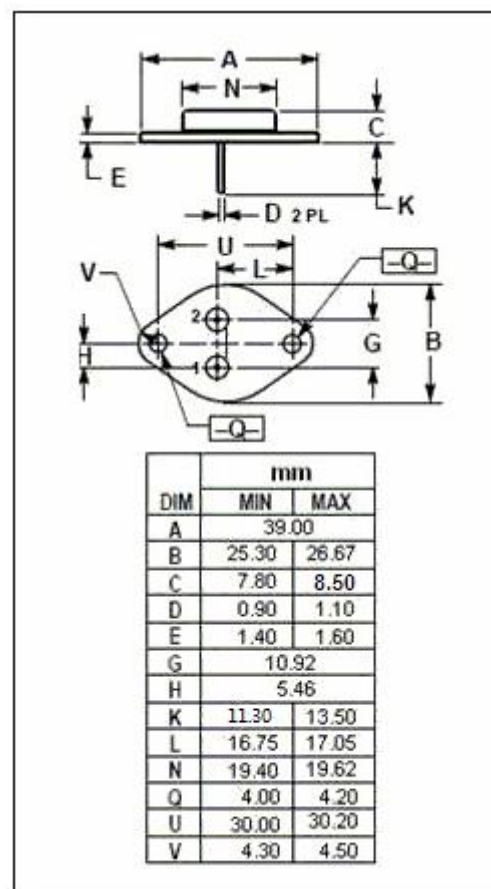
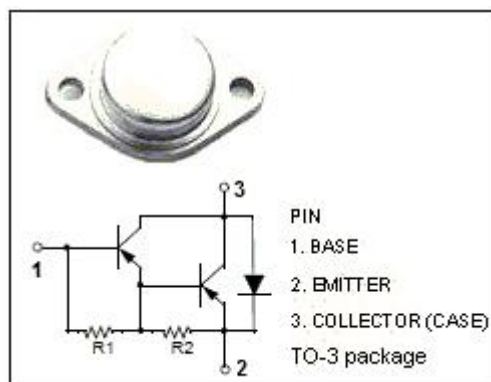
- Designed for general purpose amplifier and low frequency switching applications.

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	-100	V
V_{CEO}	Collector-Emitter Voltage	-100	V
V_{EBO}	Emitter-Base Voltage	-5	V
I_C	Collector Current -Continuous	-10	A
I_{CM}	Collector Current-Peak	-15	A
I_B	Base Current	-0.2	A
P_C	Collector Power Dissipation@ $T_C=25^{\circ}C$	80	W
T_J	Junction Temperature	150	$^{\circ}C$
T_{stg}	Storage Temperature	-65~150	$^{\circ}C$

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th j-c}$	ThermalResistance, Junction to Case	1.17	$^{\circ}C/W$



isc Silicon PNP Darlington Power Transistor**2SB638****ELECTRICAL CHARACTERISTICS** $T_C=25^{\circ}\text{C}$ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C = -10\text{mA}$; $I_B = 0$	-100		V
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	$I_C = -5\text{A}$; $I_B = -20\text{mA}$		-2.0	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	$I_C = -10\text{A}$; $I_B = -100\text{mA}$		-3.0	V
$V_{BE(on)}$	Base-Emitter On voltage	$I_C = -5\text{A}$; $V_{CE} = -3\text{V}$		-2.8	V
I_{CEO}	Collector Cutoff current	$V_{CE} = -100\text{V}$; $I_B = 0$		-1.0	mA
I_{CEX}	Collector Cutoff current	$V_{CE} = -100\text{V}$; $V_{BE(off)} = -1.5\text{V}$ $V_{CE} = -100\text{V}$; $V_{BE(off)} = -1.5\text{V}$, $T_C = 150^{\circ}\text{C}$		-0.1 -2.0	mA
I_{EBO}	Emitter Cut-off current	$V_{EB} = -5\text{V}$; $I_C = 0$		-2.0	mA
h_{FE-1}	DC Current Gain	$I_C = -5\text{A}$; $V_{CE} = -3\text{V}$	1000	20000	
h_{FE-2}	DC Current Gain	$I_C = -10\text{A}$; $V_{CE} = -3\text{V}$	100		
f_T	Transition frequency	$V_{CE} = -10\text{V}$, $I_C = -0.5\text{A}$, $f = 1\text{MHz}$	5		MHz

Pulse test: Pulse width $\leq 300\mu\text{s}$, duty cycle $\leq 2\%$ **Notice:**

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