

isc Silicon NPN Darlington Power Transistor

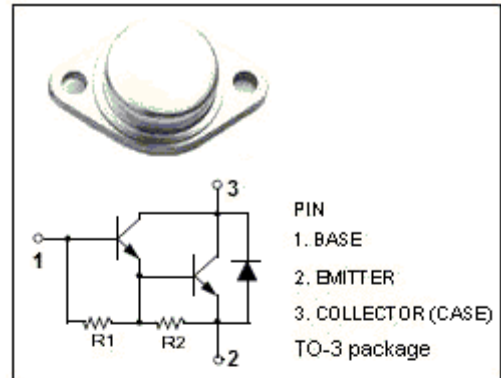
2SD628

DESCRIPTION

- Collector-Emitter Sustaining Voltage-  
:  $V_{CEO(sus)} = 100V(\text{Min.})$
- High DC Current Gain-  
:  $h_{FE} = 1000(\text{Min.}) @ I_C = 5A$
- Low Collector Saturation Voltage-  
:  $V_{CE(sat)} = 2.0V(\text{Max.}) @ I_C = 5A$
- Complement to Type 2SB638

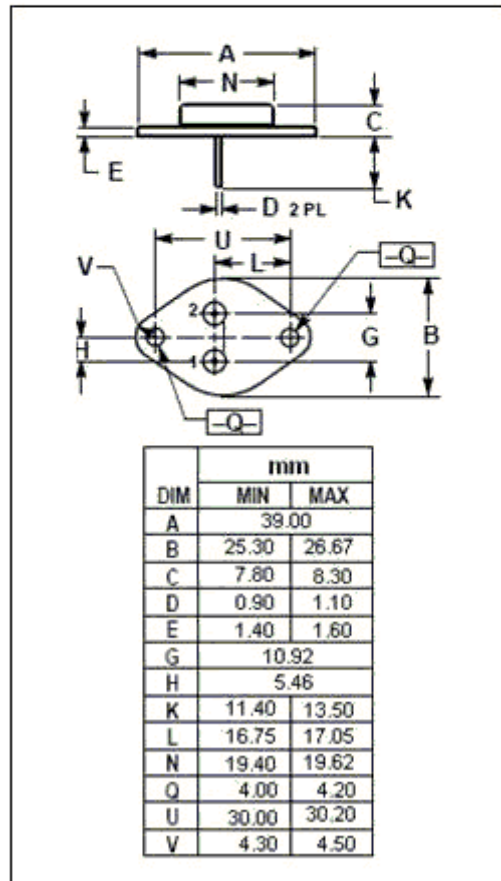
APPLICATIONS

- Designed for low frequency power amplifier and high current switching applications.



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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	100	V
$V_{CEO}$	Collector-Emitter Voltage	100	V
$V_{EBO}$	Emitter-Base Voltage	7	V
$I_C$	Collector Current-Continuous	10	A
$I_{CM}$	Collector Current-Peak	15	A
$I_B$	Base Current-Continuous	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 Range	-65~+150	$^\circ C$



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## ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CE(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C=200\text{mA}$ ; $R_{BE}=\infty$	100			V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_E=50\text{mA}$ ; $I_C=0$	7			V
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	$I_C=5\text{A}$ ; $I_B=10\text{mA}$			2.0	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	$I_C=10\text{A}$ ; $I_B=100\text{mA}$			3.0	V
$V_{BE(sat)-1}$	Base-Emitter Saturation Voltage	$I_C=5\text{A}$ ; $I_B=10\text{mA}$			2.0	V
$V_{BE(sat)-2}$	Base-Emitter Saturation Voltage	$I_C=10\text{A}$ ; $I_B=100\text{mA}$			3.5	V
$I_{CBO}$	Collector Cutoff Current	$V_{CB}=100\text{V}$ ; $I_E=0$			0.1	mA
$I_{CEO}$	Collector Cutoff Current	$V_{CE}=80\text{V}$ ; $R_{BE}=\infty$			1.0	$\mu\text{A}$
$h_{FE}$	DC Current Gain	$I_C=5\text{A}$ , $V_{CE}=3\text{V}$	1000		20000	

## Switching Times

$t_{on}$	Turn-on Time	$I_C=5\text{A}$ , $I_{B1}=-I_{B2}=10\text{mA}$		2		$\mu\text{s}$
$t_{off}$	Fall Time			8		$\mu\text{s}$