

**isc Silicon NPN Darlington Power Transistor**
**2SD1297**
**DESCRIPTION**

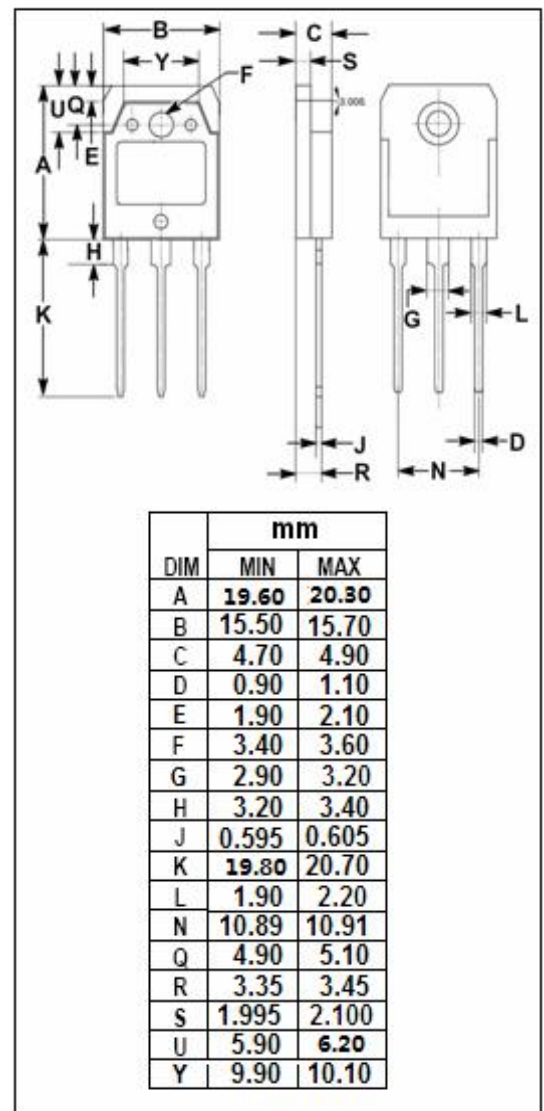
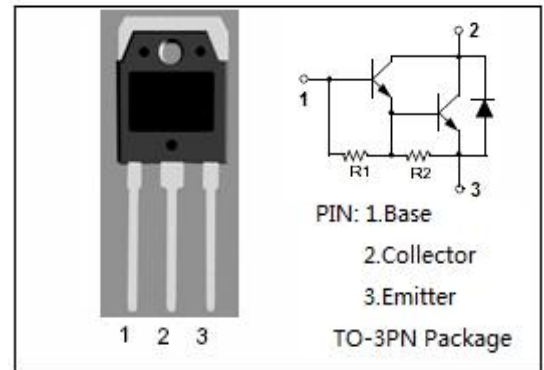
- High DC Current Gain  
:  $h_{FE} = 1000(\text{Min.}) @ I_C = 15\text{A}, V_{CE} = 2\text{V}$
- High Collector-Emitter Breakdown Voltage-  
:  $V_{(BR)CEO} = 100\text{V}(\text{Min})$
- Low Collector Saturation Voltage
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

**APPLICATIONS**

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

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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	150	V
$V_{CEO}$	Collector-Emitter Voltage	100	V
$V_{EBO}$	Emitter-Base Voltage	8	V
$I_C$	Collector Current-Continuous	25	A
$I_{CM}$	Collector Current-Peak	50	A
$I_B$	Base Current- Continuous	1.5	A
$P_C$	Collector Power Dissipation @ $T_C = 25^\circ\text{C}$	100	W
	Collector Power Dissipation @ $T_a = 25^\circ\text{C}$	3.0	
$T_j$	Junction Temperature	150	$^\circ\text{C}$
$T_{stg}$	Storage Temperature Range	-55~150	$^\circ\text{C}$



## isc Silicon NPN Darlington Power Transistor

2SD1297

## ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	$I_C=10\text{mA}, I_B=0$	100			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=15\text{A}, I_B=30\text{mA}$			1.5	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=15\text{A}, I_B=30\text{mA}$			2.2	V
$I_{CBO}$	Collector Cutoff current	$V_{CB}=100\text{V}, I_E=0$			0.1	mA
$I_{EBO}$	Emitter Cutoff Current	$V_{EB}=8\text{V}; I_C=0$			10	mA
$h_{FE-1}$	DC Current Gain	$I_C=15\text{A}; V_{CE}=2\text{V}$	1000		30000	
$h_{FE-2}$	DC Current Gain	$I_C=25\text{A}; V_{CE}=2\text{V}$	250			

## Switching Times

$t_{on}$	Turn-On Time	$I_C=15\text{A}, I_{B1}=I_{B2}=30\text{mA};$ $R_L=4\Omega; V_{CC}\approx 60\text{V}$		1.0		$\mu\text{s}$
$t_{stg}$	Storage Time			5.0		$\mu\text{s}$
$t_f$	Fall Time			2.0		$\mu\text{s}$

◆  $h_{FE-1}$  classifications

M	L	K	J
1000-3000	2000-5000	4000-10000	8000-30000

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