

isc Silicon NPN Darlington Power Transistor
2SD833
DESCRIPTION

- High DC Current Gain-
: $h_{FE} = 4000(\text{Min}) @ I_C = 3A$
- Low Collector Saturation Voltage-
: $V_{CE(\text{sat})} = 1.5V(\text{Max.}) @ I_C = 3A$
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

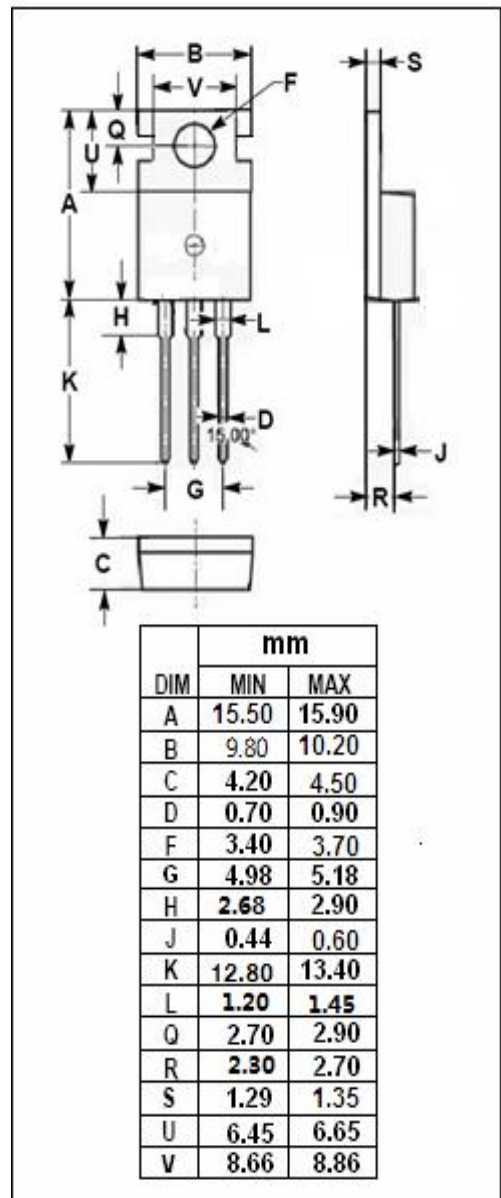
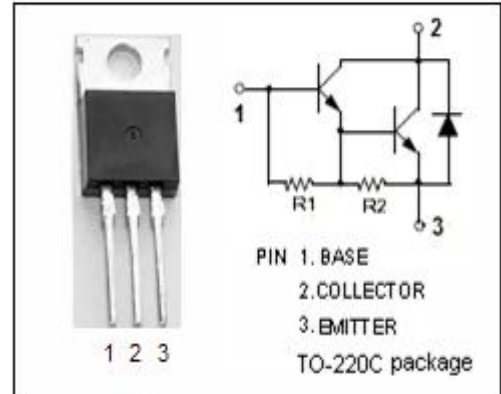
- Audio power amplifiers
- Relay & solenoid drivers
- Motor controls
- General purpose power amplifiers

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	60	V
$V_{CEO(\text{SUS})}$	Collector-Emitter Voltage	50	V
V_{CEO}	Collector-Emitter Voltage	60	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current-Continuous	7	A
I_B	Base Current-Continuous	0.2	A
P_C	Collector Power Dissipation @ $T_C = 25^\circ\text{C}$	40	W
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{stg}	Storage Temperature Range	-55~150	$^\circ\text{C}$

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{\text{th } j-c}$	Thermal Resistance, Junction to Case	3.0	$^\circ\text{C/W}$



isc Silicon NPN Darlington Power Transistor**2SD833****ELECTRICAL CHARACTERISTICS** $T_C=25^{\circ}\text{C}$ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C= 30\text{mA}; I_B= 0$	50			V
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	$I_C= 10\text{mA}; I_B= 0$	60			V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	$I_C= 0.1\text{mA}; I_E= 0$	60			V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_E= 3\text{mA}; I_C= 0$	5			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C= 3\text{A}; I_B= 6\text{mA}$			1.5	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C= 3\text{A}; I_B= 6\text{mA}$			2.5	V
I_{CBO}	Collector Cutoff Current	$V_{CB}= 60\text{V}; I_E= 0$			0.1	mA
I_{EBO}	Emitter Cutoff Current	$V_{EB}= 5\text{V}; I_C= 0$			3.0	mA
h_{FE}	DC Current Gain	$I_C= 3\text{A}; V_{CE}= 3\text{V}$	4000			

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