

isc Silicon NPN Darlington Power Transistor
2SD837
DESCRIPTION

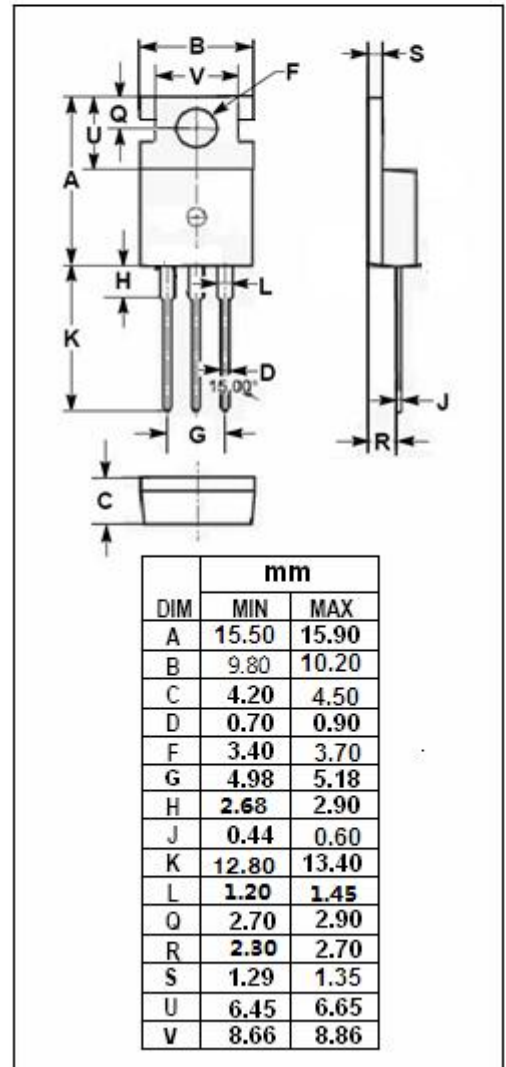
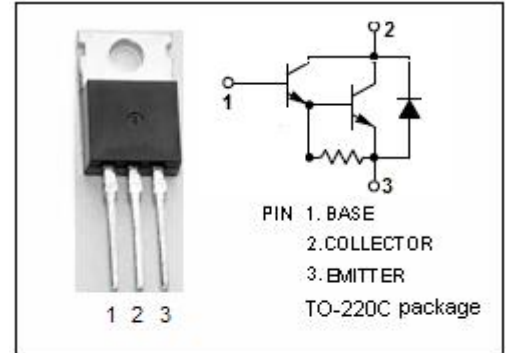
- High DC Current Gain-
: $h_{FE} = 1000(\text{Min.}) @ I_C = 3A$
- High Switching Speed
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

- Audio power amplifiers
- 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}	Collector-Emitter Voltage	60	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current-Continuous	4	A
I_{CM}	Base Current-Peak	8	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	$^\circ\text{C}$



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ELECTRICAL CHARACTERISTICS

 T_c=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V _{(BR)CEO}	Collector-Emitter Breakdown Voltage	I _C = 30mA ; I _B = 0	60			V
V _{CE(sat)-1}	Collector-Emitter Saturation Voltage	I _C = 3A; I _B = 12mA			2	V
V _{CE(sat)-2}	Collector-Emitter Saturation Voltage	I _C = 5A; I _B = 20mA			4	V
V _{BE(on)}	Base-Emitter On Voltage	I _C = 3A ; V _{CE} = 3V			2.5	V
I _{CBO}	Collector Cutoff Current	V _{CB} = 60V; I _E = 0			0.2	mA
I _{CEO}	Collector Cutoff Current	V _{CE} = 30V; I _B = 0			0.5	mA
I _{EBO}	Emitter Cutoff Current	V _{EB} = 5V; I _C =0			2	mA
h _{FE-1}	DC Current Gain	I _C = 0.5A ; V _{CE} = 3V	1000			
h _{FE-2}	DC Current Gain	I _C = 3A ; V _{CE} = 3V	1000		10000	

Switching Times

t _{on}	Turn-On Time	I _C = 3A; I _{B1} =I _{B2} = 12mA		0.3		μ s
t _{off}	Turn-Off Time			4		μ s

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