

isc Silicon NPN Darlington Power Transistor
2SD683
DESCRIPTION

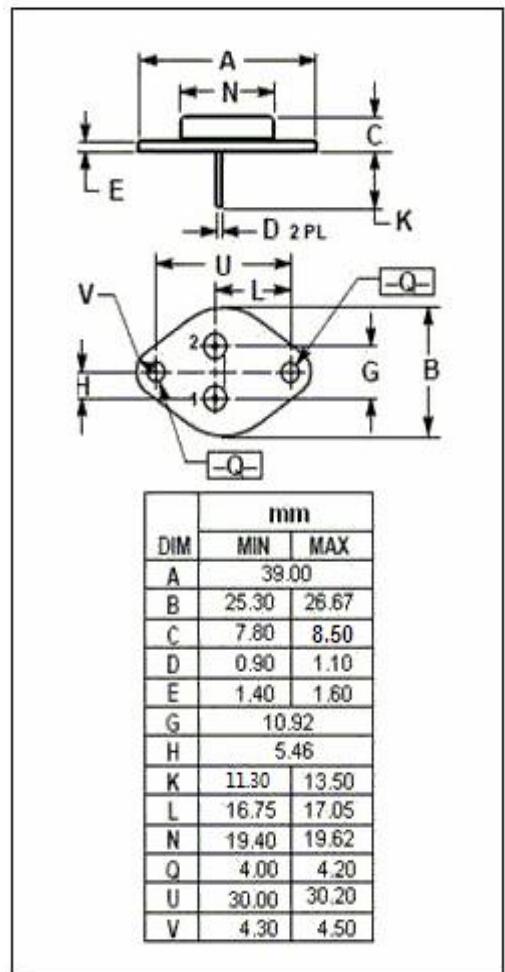
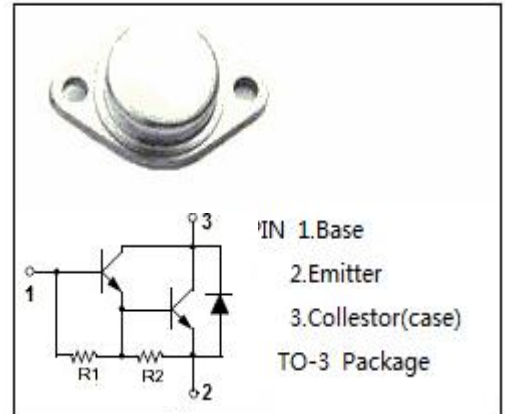
- Collector-Emitter Sustaining Voltage-
: $V_{CEO(SUS)} = 400V(\text{Min})$
- High DC Current Gain-
: $h_{FE} = 500(\text{Min.}) @ I_C = 5A$
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

- High voltage and high power switching applications.
- Motor driver applications.

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	600	V
V_{CEO}	Collector-Emitter Voltage	400	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current-Continuous	15	A
I_B	Base Current	2	A
P_C	Collector Power Dissipation @ $T_c = 25^\circ\text{C}$	150	W
T_j	Junction Temperature	150	$^\circ\text{C}$
T_{stg}	Storage Temperature Range	-65~150	$^\circ\text{C}$



isc Silicon NPN Darlington Power Transistor**2SD683****ELECTRICAL CHARACTERISTICS**T_j=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
V _{CE0(SUS)}	Collector-Emitter Sustaining Voltage	I _C = 10mA; I _B =0	400			V
V _{CE(sat)}	Collector-Emitter Saturation Voltage	I _C = 10A; I _B = 0.2A			2.0	V
V _{BE(sat)}	Base-Emitter Saturation Voltage	I _C = 10A; I _B = 0.2A			2.5	V
I _{CBO}	Collector Cutoff Current	V _{CB} = 600V; I _E = 0			0.5	mA
I _{EBO}	Emitter Cutoff Current	V _{EB} = 5V; I _C = 0			30	mA
h _{FE-1}	DC Current Gain	I _C = 5A; V _{CE} = 5V	500			
h _{FE-2}	DC Current Gain	I _C = 15A; V _{CE} = 5V	30			
V _{ECF}	C-E Diode Forward Voltage	I _F = 10A			3.0	V
C _{OB}	Output Capacitance	V _{CB} = 50V, I _E = 0; f _{test} = 1MHz		100		pF

Switching Times

t _{on}	Turn-On Time	V _{CC} =150V; I _{B1} = I _{B2} = 0.1A		0.4		μs
t _s	Storage Time			15		μs
t _f	Fall Time			3.0		μs

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