

isc Silicon NPN Power Transistor

3DF20E

DESCRIPTION

- With TO-3 packaging
- Large collector current
- Low collector saturation voltage
- High power dissipation
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

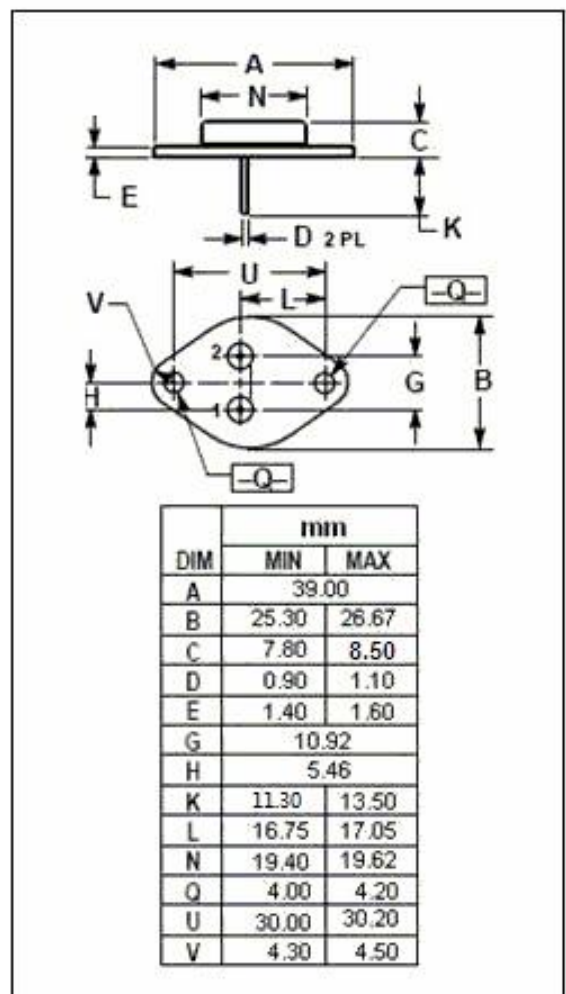
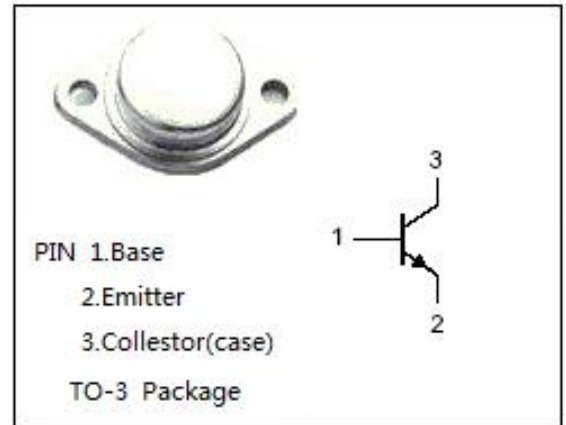
- Designed for use in DC-DC converter
- Driver of solenoid or motor

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	350	V
V_{CEO}	Collector-Emitter Voltage	250	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current-Continuous	20	A
P_D	Total Power Dissipation@ $T_C=75^{\circ}\text{C}$	200	W
T_J	Max.Junction Temperature	175	$^{\circ}\text{C}$
T_{stg}	Storage Temperature	-55~175	$^{\circ}\text{C}$

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance,Junction to Case	0.5	$^{\circ}\text{C/W}$



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ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
BV_{CBO}	Collector-Base Sustaining Voltage	$I_C=5\text{mA}; I_E=0$	350		V
BV_{CEO}	Collector-Emitter Sustaining Voltage	$I_C=5\text{mA}; I_B=0$	250		V
BV_{EBO}	Emitter-Base Sustaining Voltage	$I_E=7\text{mA}; I_C=0$	6		V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=10\text{A}; I_B=1\text{A}$		2.3	V
I_{CEO}	Collector Cutoff Current	$V_{CE}=100\text{V}; I_B=0$		1	mA
h_{FE}	DC Current Gain	$I_C=10\text{A}; V_{CE}=10\text{V}$	15		

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