

# isc Silicon NPN Power Transistor

# 3DF20A

## 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

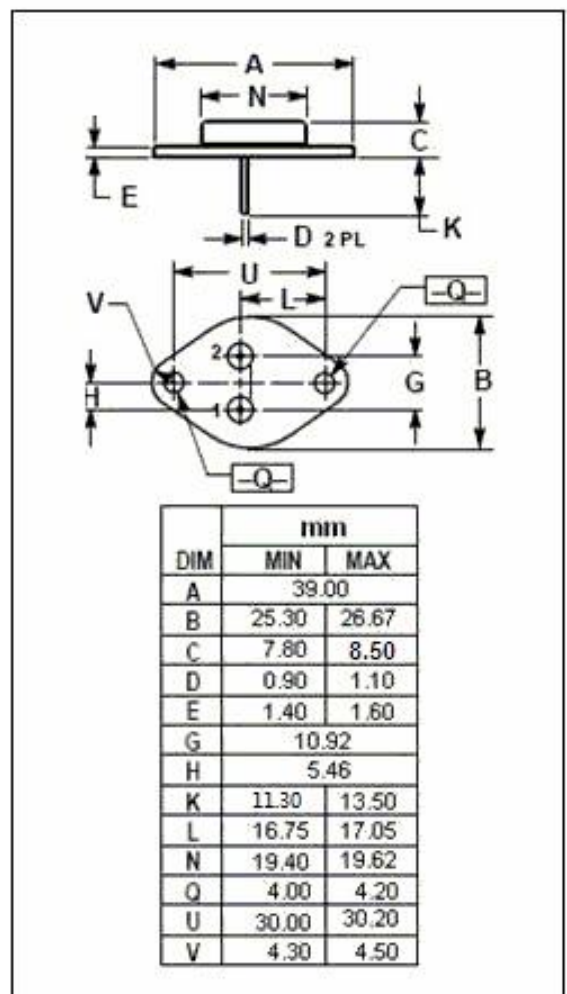
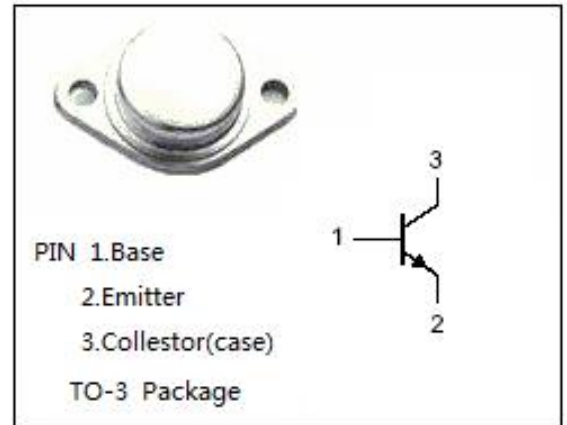
- Designed for use in DC-DC converter
- Driver of solenoid or motor

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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	80	V
$V_{CEO}$	Collector-Emitter Voltage	50	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	$^{\circ}\text{C}/\text{W}$



**isc Silicon NPN Power Transistor****3DF20A****ELECTRICAL CHARACTERISTICS** $T_C=25^\circ\text{C}$  unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
$BV_{CBO}$	Collector-Base Sustaining Voltage	$I_C=5\text{mA}; I_E=0$	80		V
$BV_{CEO}$	Collector-Emitter Sustaining Voltage	$I_C=5\text{mA}; I_B=0$	50		V
$BV_{EBO}$	Emitter-Base Sustaining Voltage	$I_E=7\text{mA}; I_C=0$	6		V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=10\text{A}; I_B=1\text{A}$		1.8	V
$I_{CEO}$	Collector Cutoff Current	$V_{CE}=30\text{V}; I_B=0$		1	mA
$h_{FE}$	DC Current Gain	$I_C=10\text{A}; V_{CE}=10\text{V}$	15		

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