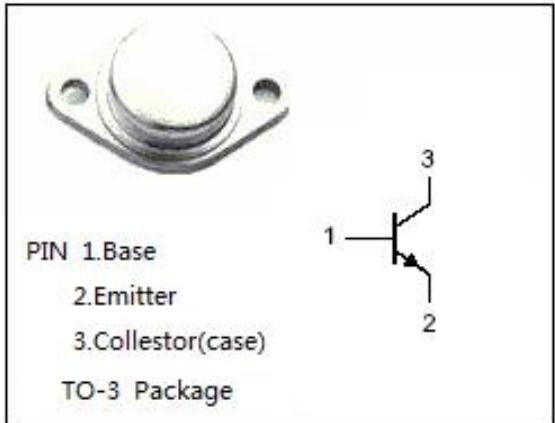


## isc Silicon NPN Power Transistor

## 3DF20D

### DESCRIPTION

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



### APPLICATIONS

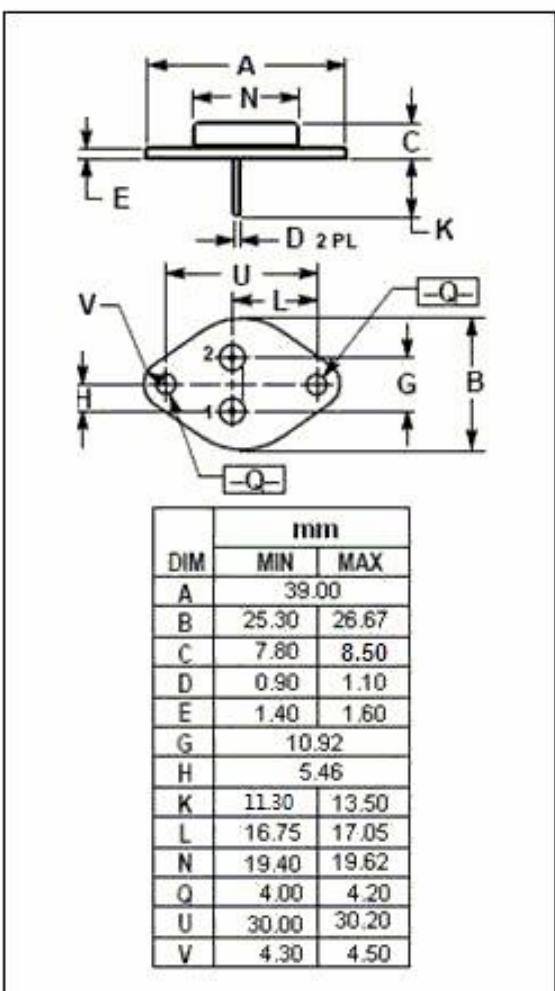
- Designed for use in DC-DC converter
- Driver of solenoid or motor

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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	250	V
$V_{CEO}$	Collector-Emitter Voltage	200	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	0.75	$^\circ\text{C}/\text{W}$



**isc Silicon NPN Power Transistor****3DF20D****ELECTRICAL CHARACTERISTICS** $T_c=25^\circ\text{C}$  unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
$\text{BV}_{\text{CBO}}$	Collector-Base Breakdown Voltage	$\text{I}_C = 5\text{mA}; \text{I}_E = 0$	250		V
$\text{BV}_{\text{CEO}}$	Collector-Emitter Sustaining Voltage	$\text{I}_C = 5\text{mA}; \text{I}_B = 0$	200		V
$\text{BV}_{\text{EBO}}$	Emitter-Base Sustaining Voltage	$\text{I}_E = 7\text{mA}; \text{I}_C = 0$	6		V
$\text{V}_{\text{CE}(\text{sat})}$	Collector-Emitter Saturation Voltage	$\text{I}_C = 10\text{A}; \text{I}_B = 1\text{A}$		1.8	V
$\text{I}_{\text{CEO}}$	Collector Cutoff Current	$\text{V}_{\text{CE}} = 100\text{V}; \text{I}_B = 0$		1	mA
$\text{h}_{\text{FE}}$	DC Current Gain	$\text{I}_C = 10\text{A}; \text{V}_{\text{CE}} = 10\text{V}$	15		

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