

isc Silicon NPN Power Transistor

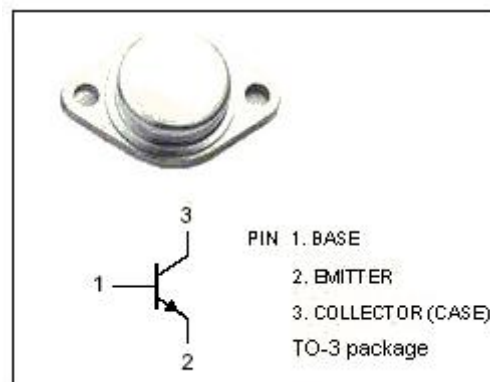
MJ413

DESCRIPTION

- High Collector-Emitter Sustaining Voltage-
: $V_{CEO(SUS)} = 325V(\text{Min.})$
- DC Current Gain-
: $h_{FE} = 20-80@ I_C = 0.5A$
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

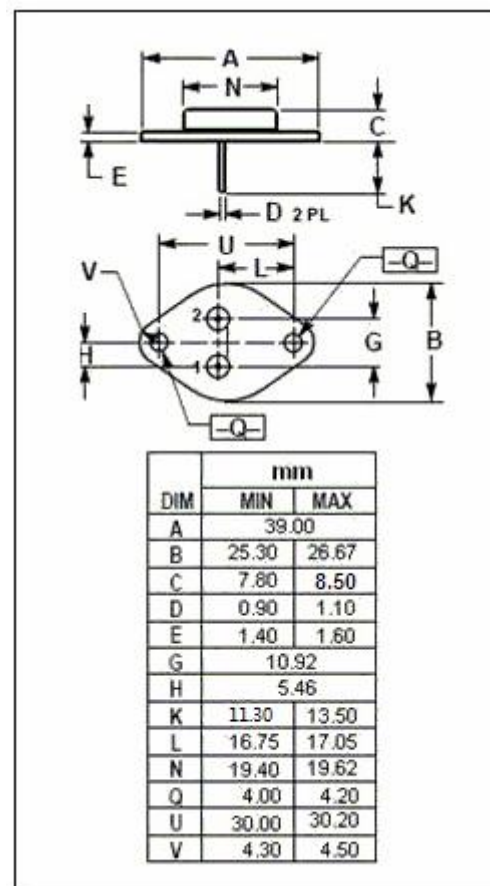
- Designed for medium to high voltage inverters, converters, regulators and switching circuits.

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	400	V
V_{CEO}	Collector-Emitter Voltage	325	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current-Continuous	10	A
I_B	Base Current-Continuous	2	A
P_C	Collector Power Dissipation@ $T_c=25^\circ\text{C}$	125	W
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{stg}	Storage Temperature Range	-65~200	$^\circ\text{C}$

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
R_{thj-c}	Thermal Resistance, Junction to Case	1.0	$^\circ\text{C/W}$



isc Silicon NPN Power Transistor**MJ413****ELECTRICAL CHARACTERISTICS****T_C=25°C unless otherwise specified**

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
V _{CEO(SUS)}	Collector-Emitter Sustaining Voltage	I _C = 50mA; I _B = 0	325			V
V _{CE(sat)}	Collector-Emitter Saturation Voltage	I _C = 0.5A; I _B = 50mA			0.8	V
V _{BE(sat)}	Base-Emitter Saturation Voltage	I _C = 0.5A; I _B = 50mA			1.25	V
I _{CBO}	Collector Cutoff Current	V _{CB} = 400V; I _E = 0, T _C =125°C			0.25	mA
I _{EBO}	Emitter Cutoff current	V _{EB} = 5V; I _C = 0			5.0	mA
h _{FE-1}	DC Current Gain	I _C = 0.5A; V _{CE} =5V	20		80	
h _{FE-2}	DC Current Gain	I _C = 1A; V _{CE} =5V	15			
f _T	Current-Gain—Bandwidth Product	I _C = 0.2A; V _{CE} =10V; f=1.0MHz	2.5			MHz

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