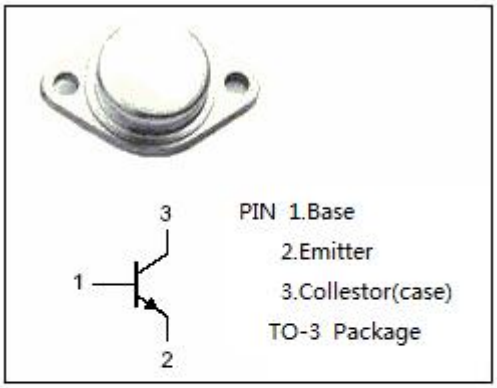
isc Silicon NPN Power Transistor 2N5038

DESCRIPTION

- High Speed-t_f= 0.5 μ s (Max)
- Low Saturation Voltage-
  $V_{CE(sat)}$ ≤2.5V@ I_C= 20A
- 100% avalanche tested
- Minimum Lot-to-Lot variations for robust device Performance and reliable operation.



APPLICATIONS

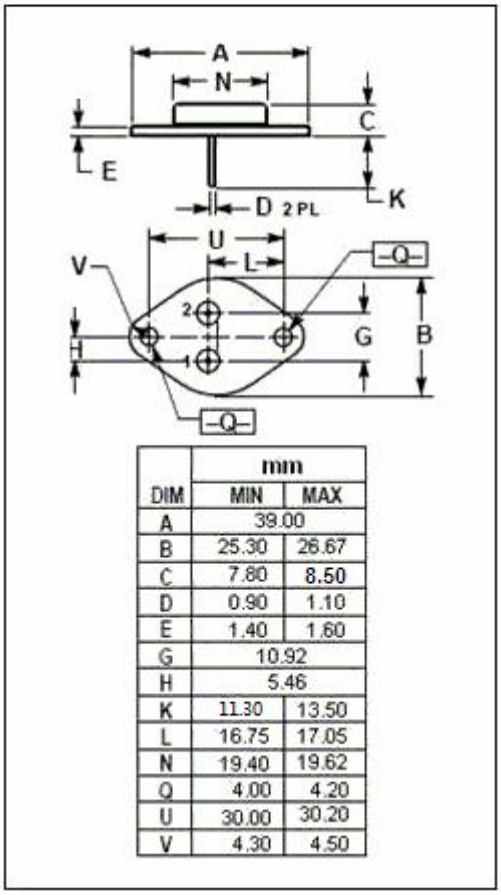
- Designed for use in switching regulators, inverters, wide-band amplifiers and power oscillators in industrial and commercial applications.

ABSOLUTE MAXIMUM RATINGS(T_a=25℃)

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector- Base Voltage	150	V
V_{CEO}	Collector-Emitter Voltage	90	V
V_{EBO}	Emitter-Base Voltage	7	V
I_C	Collector Current-Continuous	20	A
I_B	Base Current-Continuous	5	A
P_C	Collector Power Dissipation @T_C=25℃	140	W
T_J	Junction Temperature	200	℃
T_{stg}	Storage Temperature Range	-65~200	℃

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j\text{-}c}$	Thermal Resistance,Junction to Case	1.25	℃/W



DIM	mm MIN	MAX
A	39.00	
B	25.30	26.67
C	7.80	8.50
D	0.90	1.10
E	1.40	1.60
G	10.92	
H	5.46	
K	11.30	13.50
L	16.75	17.05
N	19.40	19.62
Q	4.00	4.20
U	30.00	30.20
V	4.30	4.50

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ELECTRICAL CHARACTERISTICS

Tj=25℃ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	I_C= 50mA ; I_B= 0	90		V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	I_C= 20A; I_B= 5.0A		2.5	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	I_C= 20A; I_B= 5.0A		3.3	V
I_{CEX}	Collector Cutoff Current	V_{CE}= 150V; $V_{BE(off)}$=1.5V		0.5	mA
I_{EBO}	Emitter Cutoff Current	V_{EB}= 5.0V; I_C= 0 V_{EB}= 7.0V; I_C= 0		5 50	mA
h_{FE}	DC Current Gain	I_C= 12A ; V_{CE}= 5V	20	100	
Switching times					
t_r	Rise Time	V_{CC}= 30V, I_C= 12A , I_{B1}= -I_{B2}= 1.2A,		0.5	μs
t_s	Storage Time			1.5	μs
t_f	Fall Time			0.5	μs