

isc Silicon NPN Power Transistor

2N6738

DESCRIPTION

- Collector-Emitter Sustaining Voltage-
: $V_{CEO(SUS)} = 300V(\text{Min})$
- High Switching Speed
- Low Saturation Voltage

APPLICATIONS

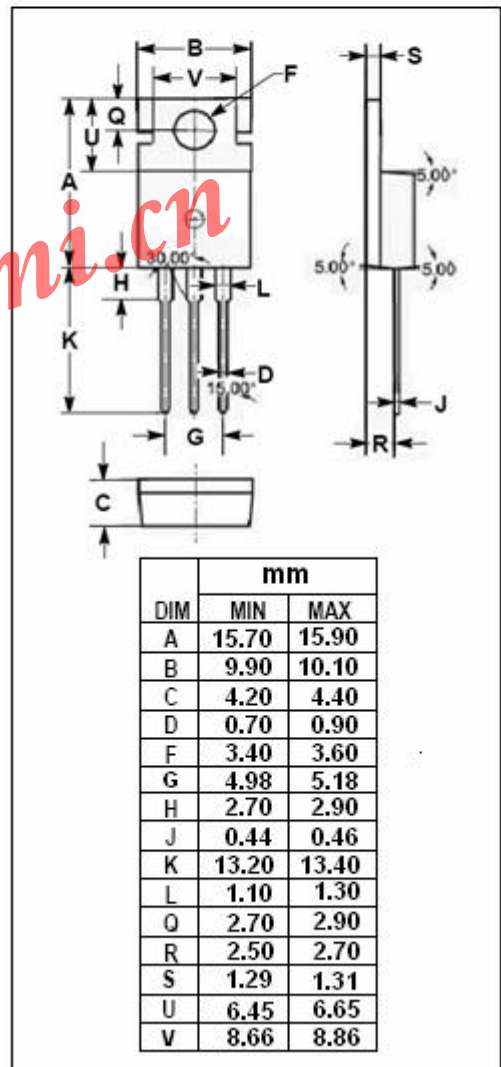
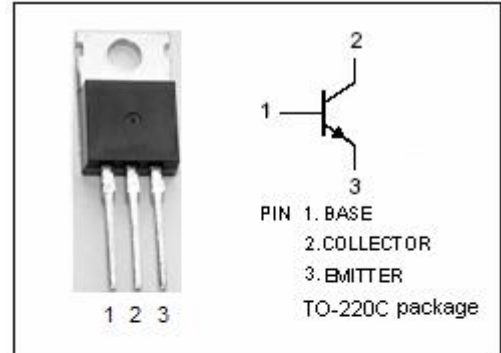
- Designed for use in high-voltage, high-speed , power switching in inductive circuit , they are particularly suited for 115 and 220V switchmode applications such as switching regulators, inverters, DC-DC and converter.

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CEV}	Collector-Emitter Voltage- $V_{BE} = -1.5V$	450	V
V_{CEX}	Collector-Emitter Voltage- $V_{BE} = -1.5V$	350	V
V_{CEO}	Collector-Emitter Voltage	300	V
V_{EBO}	Emitter-Base Voltage	8	V
I_C	Collector Current-Continuous	8	A
I_{CM}	Collector Current-Peak	10	A
I_B	Base Current-Continuous	4	A
P_C	Collector Power Dissipation $T_C=25^\circ\text{C}$	100	W
T_j	Junction Temperature	150	$^\circ\text{C}$
T_{stg}	Storage Ttemperature Range	-65~150	$^\circ\text{C}$

THERMAL CHARACTERISTICS

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



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ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C=200\text{mA}; I_B=0$	300		V
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	$I_C=5\text{A}; I_B=1\text{A}$		1	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	$I_C=8\text{A}; I_B=4\text{A}$		2	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=5\text{A}; I_B=1\text{A}$		1.6	V
I_{CEV}	Collector Cutoff Current	$V_{CEV}=450\text{V}; V_{BE(off)}=-1.5\text{V}$ $V_{CEV}=450\text{V}; V_{BE(off)}=-1.5\text{V}; T_J=100^\circ\text{C}$		0.1 1.0	mA
I_{EBO}	Emitter Cutoff Current	$V_{EB}=8\text{V}; I_C=0$		2	mA
h_{FE}	DC Current Gain	$I_C=5\text{A}; V_{CE}=3\text{V}$	10	40	
f_T	Current-Gain—Bandwidth Product	$I_C=0.2\text{A}; V_{CE}=10\text{V}; f_{res}=1\text{MHz}$	10	60	MHz

Switching Times; Resistive Load

t_d	Delay Time	$I_C=5\text{A}; I_{B1}=-I_{B2}=1\text{A}; V_{CC}=125\text{V};$ $t_p=20\mu\text{s}; \text{Duty Cycle}\leq 1\%$		0.1	μs
t_r	Rise Time			0.4	μs
t_s	Storage Time			2.5	μs
t_f	Fall Time			0.5	μs