

## Silicon NPN Power Transistors

## 2N6738 2N6739 2N6740

## DESCRIPTION

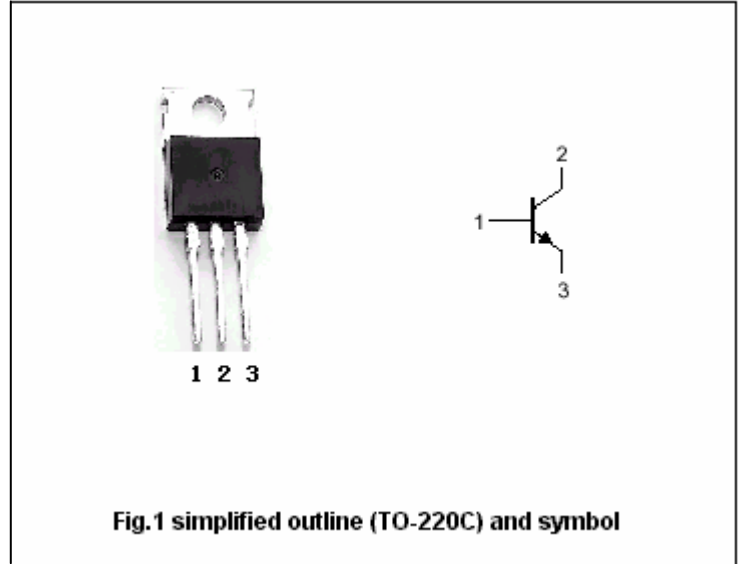
- With TO-220 package
- High voltage ratings
- Low collector saturation voltage
- Fast switching speed

## APPLICATIONS

- Suited for 115 and 220V switchmode applications such as switching regulators, Inverters and DC-DC converters

## PINNING

PIN	DESCRIPTION
1	Base
2	Collector;connected to mounting base
3	Emitter

Absolute maximum ratings( $T_a=25^\circ$ )

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$V_{CBO}$	Collector-base voltage	2N6738	450	V
		2N6739	550	
		2N6740	650	
$V_{CEO}$	Collector-emitter voltage	2N6738	300	V
		2N6739	350	
		2N6740	400	
$V_{EBO}$	Emitter-base voltage	Open collector	8	V
$I_C$	Collector current		8	A
$I_{CM}$	Collector current-peak		10	A
$I_B$	Base current		4	A
$P_T$	Total power dissipation	$T_C=25^\circ$	100	W
$T_j$	Junction temperature		150	$^\circ$
$T_{stg}$	Storage temperature		-65~150	$^\circ$

## THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal resistance from junction to case	1.25	$^\circ/W$

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## CHARACTERISTICS

T<sub>j</sub>=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>CEO(SUS)</sub>	Collector-emitter sustaining voltage	2N6738	300			V
		2N6739	350			
		2N6740	400			
		I <sub>C</sub> =0.2A ; I <sub>B</sub> =0				
V <sub>CEsat-1</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =5A; I <sub>B</sub> =1A			1.0	V
V <sub>CEsat-2</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =8A; I <sub>B</sub> =4A			2.0	V
V <sub>BEsat</sub>	Base-emitter saturation voltage	I <sub>C</sub> =5A; I <sub>B</sub> =1A			1.6	V
I <sub>CEV</sub>	Collector cut-off current	V <sub>CEV</sub> =Rated V <sub>CEV</sub> ; V <sub>BE</sub> =-1.5V T <sub>C</sub> =100°C			0.1 1.0	mA
I <sub>EBO</sub>	Emitter cut-off current	V <sub>EB</sub> =8V; I <sub>C</sub> =0			2.0	mA
h <sub>FE</sub>	DC current gain	I <sub>C</sub> =5A ; V <sub>CE</sub> =3V	10		40	
f <sub>T</sub>	Transition frequency	I <sub>C</sub> =0.2A ; V <sub>CE</sub> =10V	10		60	MHz

## Switching times

t <sub>d</sub>	Delay time	I <sub>C</sub> =5A; I <sub>B1</sub> =-I <sub>B2</sub> =1A V <sub>CC</sub> =125V t <sub>p</sub> =20μs, Duty cycle≤1.0%			0.1	μs
t <sub>r</sub>	Rise time				0.4	μs
t <sub>s</sub>	Storage time				2.5	μs
t <sub>f</sub>	Fall time				0.5	μs

