

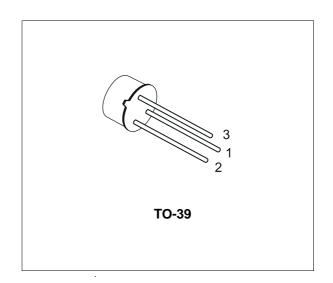
SILICON NPN TRANSISTORS

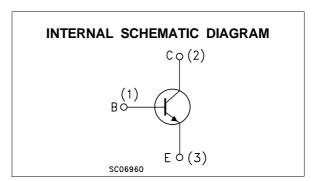
- STMicroelectronics PREFERRED SALESTYPES
- NPN TRANSISTOR

DESCRIPTION

The 2N3439 and 2N3440 are silicon epitaxial planar NPN transistors in jedec TO-39 metal case designed for use in consumer and industrial line-operated applications.

These devices are particularly suited as drivers in high-voltage low current inverters, switching and series regulators.





ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Va	Unit	
		2N3439	2N3440	
V _{CBO}	Collector-Base Voltage (I _E = 0)	450	300	V
Vceo	Collector-Emitter Voltage (I _B = 0)	Emitter Voltage ($I_B = 0$) 350 250		V
V _{EBO}	Emitter-Base Voltage (I _C = 0)		7	
Ic	Collector Current	1		Α
Ι _Β	Base Current	0.5		Α
P _{tot}	Total Dissipation at T _c ≤ 25 °C	10		W
P _{tot}	Total Dissipation at T _{amb} ≤ 50 °C		1	
T _{stg}	Storage Temperature	-65 to 200		°C
Tj	Max. Operating Junction Temperature	200		°C

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THERMAL DATA

R _{thj-case}	Thermal Resistance Junction-case	Max	17.5	°C/W	
R _{thj-amb}	Thermal Resistance Junction-ambient	Max	175	°C/W	

ELECTRICAL CHARACTERISTICS (T_{case} = 25 °C unless otherwise specified)

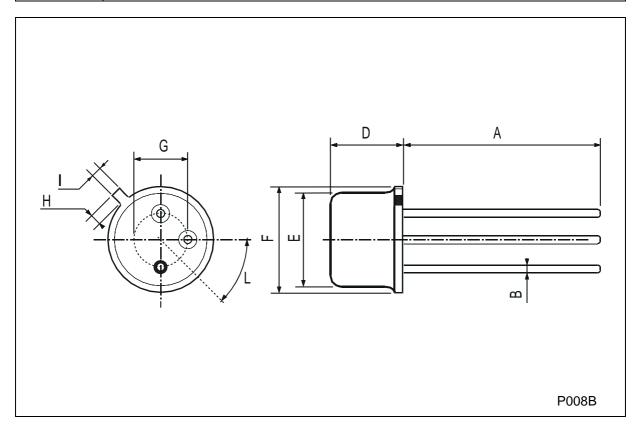
Symbol	Parameter	Test Conditions	Min.	Тур.	Max.	Unit
Ісво	Collector Cut-off Current (I _E = 0)	for 2N3439 V _{CB} = 360 V for 2N3440 V _{CB} = 250 V			20 20	μΑ μΑ
I _{CEO}	Collector Cut-off Current (I _B = 0)	for 2N3439 V _{CE} = 300 V for 2N3440 V _{CE} = 200 V			20 50	μΑ μΑ
I _{CEX}	Collector Cut-off Current (V _{BE} = -1.5V)	for 2N3439 V _{CE} = 450 V for 2N3440 V _{CE} = 300 V			500 500	μA μA
I _{EBO}	Emitter Cut-off Current (I _C = 0)	V _{EB} = 6 V			20	μΑ
V _{CEO(sus)} *	Collector-Emitter Sustaining Voltage	I _C = 50 mA for 2N3439 for 2N3440	350 250			V V
V _{CE(sat)} *	Collector-Emitter Saturation Voltage	$I_C = 50 \text{ mA}$ $I_B = 4 \text{ mA}$			0.5	V
V _{BE(sat)} *	Base-Emitter Saturation Voltage	$I_C = 50 \text{ mA}$ $I_B = 4 \text{ mA}$			1.3	V
h _{FE} *	DC Current Gain	$I_C = 20 \text{ mA}$ $V_{CE} = 10 \text{ V}$ $I_C = 2 \text{ mA}$ $V_{CE} = 10 \text{ V}$ for 2N3439	40 30		160	
h _{FE}	Small Signal Current Gain	$I_C = 5 \text{ mA}$ $V_{CE} = 10 \text{ V}$ $f = 1 \text{KHz}$	25			
f⊤	Transition frequency	$I_C = 5 \text{ mA}$ $V_{CE} = 10 \text{ V}$ $f = 5 \text{MHz}$	15			MHz

^{*} Pulsed: Pulse duration = 300 μs, duty cycle 1.5 %

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TO-39 MECHANICAL DATA

DIM.	mm			inch			
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.	
А	12.7			0.500			
В			0.49			0.019	
D			6.6			0.260	
Е			8.5			0.334	
F			9.4			0.370	
G	5.08			0.200			
Н			1.2			0.047	
I			0.9			0.035	
L	45° (typ.)						



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