

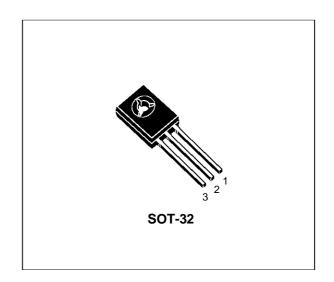


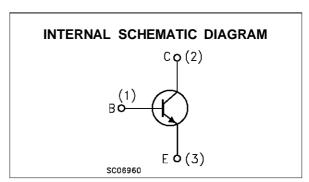
# SILICON NPN TRANSISTOR

- SGS-THOMSON PREFERRED SALESTYPE
- NPN TRANSISTOR

#### **DESCRIPTION**

The MJE3440 is a NPN silicon epitaxial planar transistors in SOT-32 plastic package. It is designed for use in consumer and industrial line-operated applications.





#### **ABSOLUTE MAXIMUM RATINGS**

Symbol	Parameter	Value	Unit
$V_{CBO}$	Collector-Base Voltage (I <sub>E</sub> = 0)	350	V
$V_{CEO}$	Collector-Emitter Voltage (I <sub>B</sub> = 0)	250	V
V <sub>EBO</sub>	Emitter-Base Voltage (I <sub>C</sub> = 0)	5	V
Ic	Collector Current	0.3	Α
lΒ	Base Current	0.15	Α
P <sub>tot</sub>	Total Power Dissipation at Tcase ≤ 25 °C	15	W
T <sub>stg</sub>	Storage Temperature	-65 to +150	°C
Tj	Max. Operating Junction Temperature	150	°C

June 1997 1/5

#### THERMAL DATA

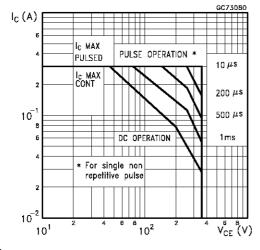
R <sub>thj-case</sub> Thermal Resistance Junction-case	Max	8.33	°C/W
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# **ELECTRICAL CHARACTERISTICS** (T<sub>case</sub> = 25 °C unless otherwise specified)

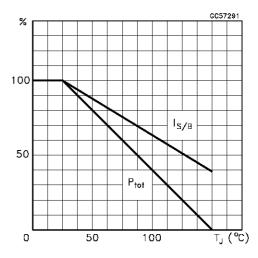
Symbol	Parameter	Test Conditions	Min.	Тур.	Max.	Unit
I <sub>CBO</sub>	Collector Cut-off Current (I <sub>E</sub> = 0)	V <sub>CB</sub> = 250 V			20	μА
I <sub>CEV</sub>	Collector Cut-off Current (V <sub>BE</sub> = -1.5V)	V <sub>CE</sub> = 300 V			500	μΑ
I <sub>CEO</sub>	Collector Cut-off Current (I <sub>B</sub> = 0)	V <sub>CE</sub> = 200 V			50	μΑ
I <sub>EBO</sub>	Emitter Cut-off Current (I <sub>C</sub> = 0)	V <sub>EB</sub> = 5 V			20	μΑ
V <sub>CE(sat)</sub> *	Collector-Emitter Saturation Voltage	$I_C = 50 \text{ mA}$ $I_B = 4 \text{ mA}$			0.5	V
$V_{BE(sat)^*}$	Base-Emitter Saturation Voltage	$I_C = 50 \text{ mA}$ $I_B = 4 \text{ mA}$			0.3	V
$V_{BE^*}$	Base-Emitter Voltage	$I_C = 50 \text{ mA}$ $V_{CE} = 10 \text{ V}$	•		0.8	V
h <sub>FE</sub> *	DC Current Gain	$\begin{tabular}{l l} $I_C=2$ mA & $V_{CE}=10$ V \\ $I_C=20$ mA & $V_{CE}=10$ V \end{tabular}$	30 50		200	
h <sub>fe</sub>	Small Signal Current Gain	$I_C = 5 \text{ mA}$ $V_{CE} = 10 \text{ V}$ $f = 1 \text{ KHz}$	25			
f⊤	Transistor Frequency	$I_C = 10 \text{ mA}$ $V_{CE} = 10 \text{ V}$ $f = 5 \text{ MHz}$	15			MHz
Ссво*	Collector-Base Capacitance	$V_{CB} = 10 \text{ V}$ $I_E = 0$ $f = 1 \text{ MHz}$			10	pF

<sup>\*</sup> Pulsed: Pulse duration = 300μs, duty cycle ≤ 1.5 %

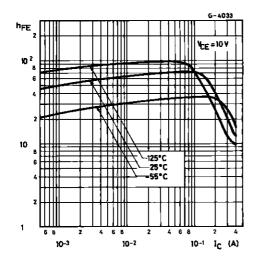
### Safe Operating Area



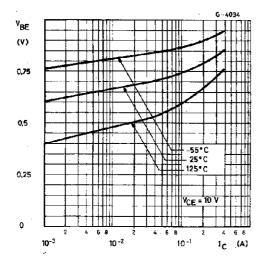
### **Derating Curve**



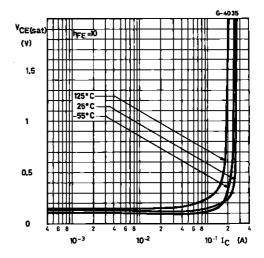
### DC Current Gain



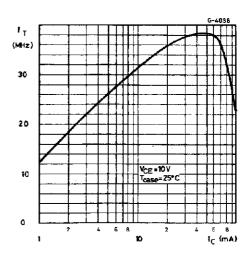
#### Base-emitter Voltage



### Collector-emitter Saturation Voltage

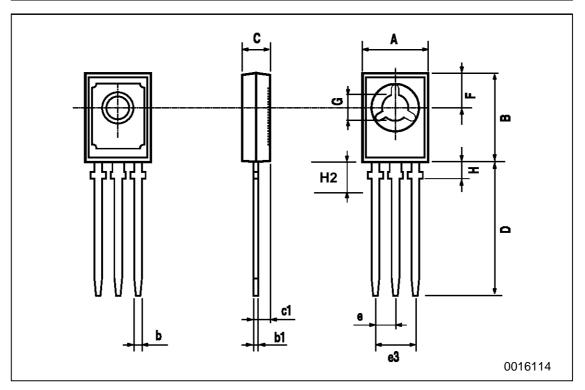


**Transition Frequency** 



# SOT-32 (TO-126) MECHANICAL DATA

DIM.	mm		inch			
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
Α	7.4		7.8	0.291		0.307
В	10.5		10.8	0.413		0.445
b	0.7		0.9	0.028		0.035
b1	0.49		0.75	0.019		0.030
С	2.4		2.7	0.040		0.106
c1	1.0		1.3	0.039		0.050
D	15.4		16.0	0.606		0.629
е		2.2			0.087	
e3	4.15		4.65	0.163		0.183
F		3.8			0.150	
G	3		3.2	0.118		0.126
Н			2.54			0.100
H2		2.15			0.084	



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