

Low voltage high speed switching NPN transistor

Features

- High speed switching
- NPN device

Applications

- Audio amplifier
- High speed switching applications

Description

This device is an NPN low voltage transistor manufactured using epitaxial planar technology and housed in a SOT-32 plastic package. It is designed for low power audio amplifiers and low current, high speed switching applications.

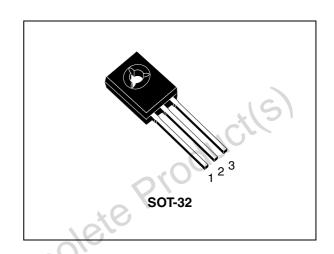


Figure 1. Internal schematic diagram

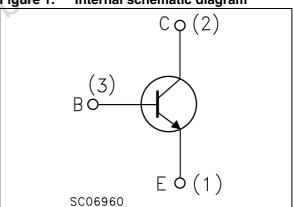


Table 1. Device summary

Order code	Marking	Package	Packaging
MJE182	MJE182	SOT-32	Tube

August 2011 Doc ID 022074 Rev 1 1/7

Electrical ratings MJE182

1 Electrical ratings

Table 2. Absolute maximum ratings

Symbol	Parameter	Value	Unit	
V _{CEO}	Collector-emitter voltage (I _B = 0)	80	V	
V _{CBO}	Collector-base voltage (I _E = 0)	100	V	
V _{EBO}	Base-emitter voltage ($I_C = 0$)	7	V	
I _C	Collector current	3	Α	
I _{CM}	Collector peak current (t _P < 5 ms)	6	Α	
I _B	Base current	1	Α	
I _{BM}	Base peak current (t _P < 5 ms)	2	Α	
P _{TOT}	Total dissipation at T _c ≤ 25 °C	12.5	W	
T _{stg}	Storage temperature	-65 to 150	°C	
T _J	Total power dissipation at T _c ≤ 25 °C	150	1	

Table 3. Thermal data

	Symbol	Parameter	Value	Unit
	R _{thJC}	Thermal resistance junction-case max	10	°C/W
	R _{th-amb}	Thermal resistance junction-ambient max	83.3	°C/W
Obsolete Product		COGINIC		

2 Electrical characteristics

 T_{case} = 25 °C unless otherwise specified.

Table 4. Electrical characteristics

Symbol	Parameter	Test condition	ns M	/lin.	Тур.	Max.	Unit
Ісво	Collector cut-off current (I _E = 0)	$V_{CB} = 100 \text{ V}$ $V_{CB} = 100 \text{ V}, T_{c} = 150 \text{ C}$) °C			0.1 0.1	μA mA
V _{EBO}	Emitter cut-off current (I _C = 0)	$V_{EB} = 7 \text{ V}$				0.1	μΑ
V _{CEO(sus)} ⁽¹⁾	Collector-emitter sustaining voltage (I _B = 0)	I _C = 10 mA	8	80	2		V
V _{CE(sat)} (1)	Collector-emitter saturation voltage	$I_C = 1.5 \text{ A}$ $I_B =$	50 mA 0.15 A 0.6 A	29		0.3 0.9 1.7	V
V _{BE(sat)} (1)	Base-emitter saturation voltage		0.15 A 0.6 A			1.5 2	< <
V _{BE(on)} (1)	Base-emitter on voltage	$I_{\rm C} = 0.5 {\rm A}$ $V_{\rm CE}$	==1 V			1.2	٧
h _{FE}	DC current gain	$I_C = 0.5 \text{ A}$ V_{CE}	= 1 V	50 30 12		250	
f _T	Transistor frequency	$I_C = 0.1 \text{ A}$ V_C $f=10 \text{ MHz}$	E = 10 V	50			MHz
C _{CBO}	Collector-base capacitance (I _E =0)	V _{CB} = 10 V f=	0.1 MHz			40	рF

^{1.} Pulse test: pulse duration \leq 300 μ s, duty cycle \leq 1.5 %.

3 Package mechanical data

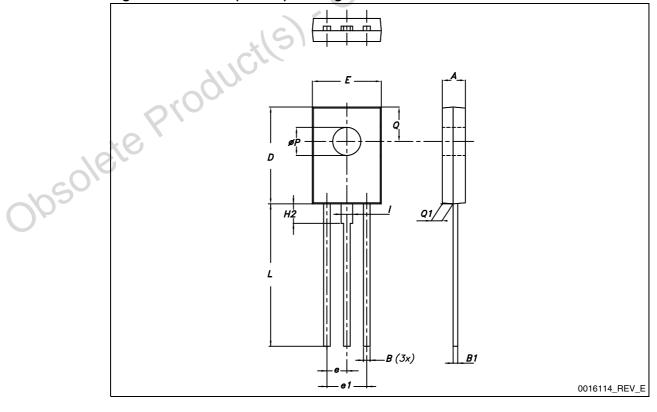
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Table 5. SOT-32 (TO-126) mechanical data

Dim	mm.					
Dim.	Min.	Тур.	Max.			
Α	2.40		2.90			
В	0.64		0.88			
B1	0.39		0.63			
D	10.50		11.05			
E	7.40		7.80			
е	2.04	2.29	2.54			
e1	4.07	4.58	5.08			
L	15.30		16			
ØP	2.90		3.20			
Q		3.80				
Q1	1	*6	1.52			
H2		2.15				
I		1.27				

Figure 2. SOT-32 (TO-126) drawing



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Revision history MJE182

4 Revision history

Table 6. Document revision history

Date	Revision	Changes
08-Aug-2011	1	Initial release

Obsolete Product(s). Obsolete Product(s)

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