

Complementary silicon power transistors

Features

- STMicroelectronics preferred salestypes
- Complementary NPN PNP devices

Applications

■ Linear and switching industrial equipment

Description

The MJE340 is a silicon planar NPN transistor intended for use in medium power linear and switching applications. It is mounted in SOT-32.

The complementary PNP type is MJE350.

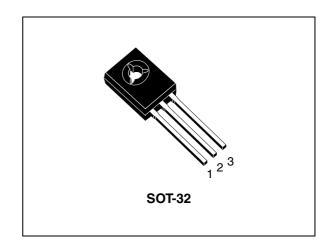


Figure 1. Internal schematic diagram

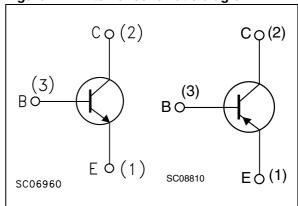


Table 1. Device summary

Order code	Marking	Polarity	Package	Packaging
MJE340	MJE340	NPN	SOT-32	Tube
MJE350	MJE350	PNP	SOT-32	Tube

Electrical ratings MJE340, MJE350

1 Electrical ratings

Table 2. Absolute maximum ratings

		Value	Unit	
Symbol	Parameter	MJE340 (NPN)		
		MJE350 (PNP)		
V_{CBO}	Collector-base voltage (I _E = 0)	300	V	
V _{CEO}	Collector-emitter voltage (I _B = 0)	300	V	
V _{EBO}	Base-emitter voltage ($I_C = 0$)	3	V	
I _C	Collector current	0.5	Α	
P _{TOT}	Total dissipation at T _c ≤ 25 °C	20.8	W	
T _{stg}	Storage temperature	-65 to 150	°C	
T _J	Max operating junction temperature	150]	

Note: for PNP type voltage and current values are negative.

Table 3. Thermal data

Syı	mbol	Parameter	Value	Unit
R	thJC	Thermal resistance junction-case max	6.0	°C/W

2 Electrical characteristics

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

Table 4. Electrical characteristics

Symbol	Parameter	Test conditions	Min.	Тур.	Max.	Unit
I _{CBO}	Collector cut-off current (I _E = 0)	V _{CB} = 300 V			100	μΑ
I _{EBO}	Emitter cut-off current (I _C = 0)	V _{EB} = 3 V			100	μΑ
V _{CEO(sus)} ⁽¹⁾	Collector-emitter sustaining voltage $(I_B = 0)$	I _C = 1 mA	300			٧
V _{BE(on)}	Emitter-base on voltage $(I_C = 0)$	$I_C = 50 \text{ mA}$ $V_{CE} = 10 \text{ V}$			1	V
V _{CE(sat)} (1)	Collector-emitter saturation voltage	I _C = 100 mA			0.5	V
h _{FE}	DC current gain	$I_C = 50 \text{ mA}$ $V_{CE} = 10 \text{ V}$	30		240	

^{1.} Pulse test: pulse duration = 300 μ s, duty cycle \leq 2 %.

Note: for PNP type voltage and current values are negative.

Electrical characteristics MJE340, MJE350

2.1 Electrical characteristics (curves)

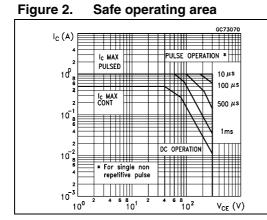


Figure 3. Derating curve

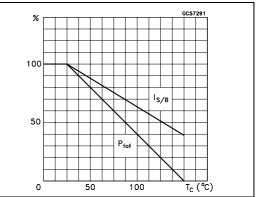
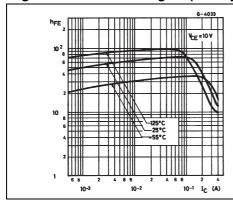


Figure 4. DC current gain (NPN type)

Figure 5. DC current

5. DC current gain (PNP type)

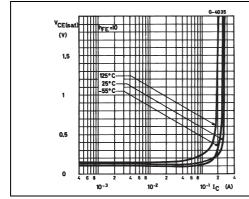


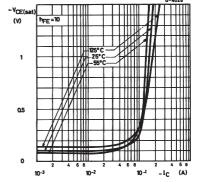
0-4027 V_{CE}-10V 100 100 100 10-3 10-2 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10-1 10

Figure 6. Collector-emitter saturation voltage (NPN type)

Figure 7. Base volta

Base-emitter saturation voltage (PNP type)





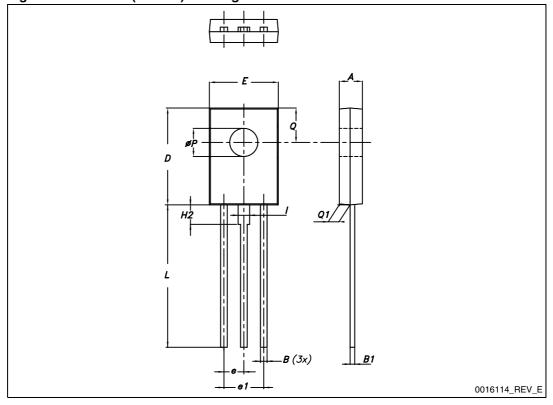
3 Package mechanical data

In order to meet environmental requirements, ST offers these devices in different grades of ECOPACK[®] packages, depending on their level of environmental compliance. ECOPACK[®] specifications, grade definitions and product status are available at: www.st.com. ECOPACK[®] is an ST trademark.

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

Dim.		mm.		
	Min.	Тур.	Max.	
Α	2.40		2.90	
В	0.64		0.88	
B1	0.39		0.63	
D	10.50	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		1.52	
H2		2.15		
I		1.27		

Figure 8. SOT-32 (TO-126) drawing



MJE340, MJE350 Revision history

4 Revision history

Table 6. Document revision history

Date	Revision	Changes
05-Apr-2011	5	Minor text changes
10-Nov-2011	6	Added: V _{CBO} in <i>Table 2</i> , V _{CE(sat)} and V _{BE(on)} in <i>Table 4</i>

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8/8 Doc ID 4171 Rev 6

