MJE340
MJE350

Complementary silicon power transistors

Features

- STMicroelectronics preferred salestypes
- Complementary NPN - PNP devices

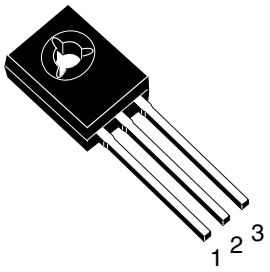
Applications

- 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.



SOT-32

Figure 1. Internal schematic diagram

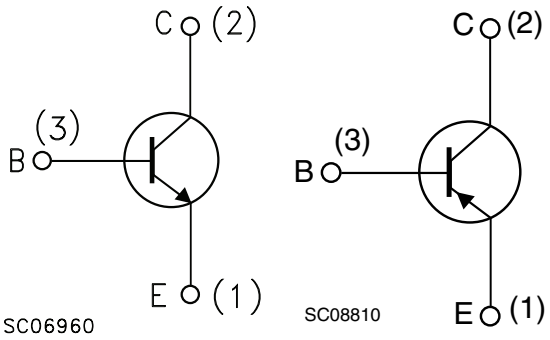


Table 1. Device summary

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

1 Electrical ratings

Table 2. Absolute maximum ratings

Symbol	Parameter	Value	Unit
		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	A
P_{TOT}	Total dissipation at $T_c \leq 25$ °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

Symbol	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.	Typ.	Max.	Unit
I_{CBO}	Collector cut-off current (I_E = 0)	V_{CB}= 300 V			100	µA
I_{EBO}	Emitter cut-off current (I_C = 0)	V_{EB} = 3 V			100	µA
$V_{CEO(sus)}$ (1)	Collector-emitter sustaining voltage (I_B = 0)	I_C = 1 mA	300			V
$V_{BE(on)}$	Emitter-base on voltage (I_C = 0)	I_C = 50 mA V_{CE}=10 V			1	V
$V_{CE(sat)}$ (1)	Collector-emitter saturation voltage	I_C = 100 mA I_B = 10 mA			0.5	V
h_{FE}	DC current gain	I_C = 50 mA V_{CE} = 10 V	30		240	

1. Pulse test: pulse duration = 300 µs, duty cycle ≤ 2 %.

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

2.1 Electrical characteristics (curves)

Figure 2. Safe operating area

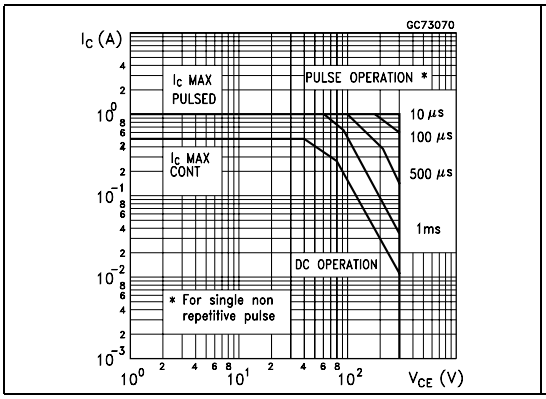


Figure 3. Derating curve

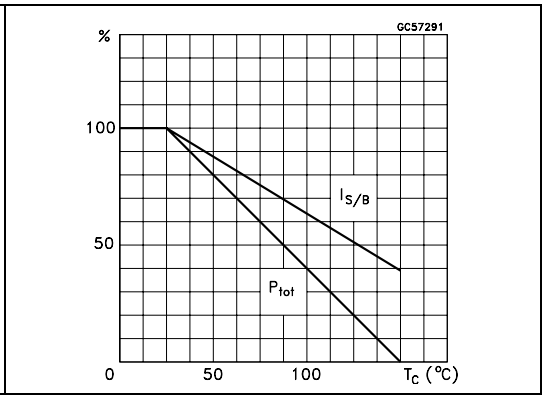


Figure 4. DC current gain (NPN type)

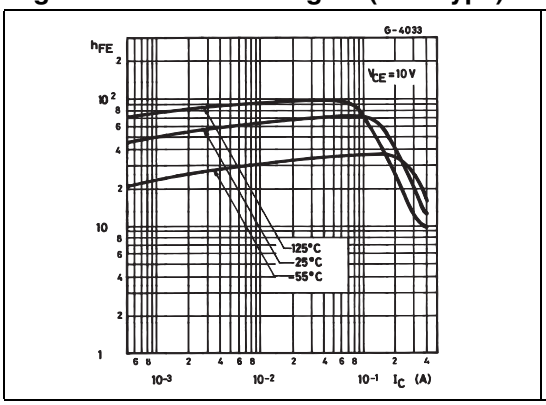


Figure 5. DC current gain (PNP type)

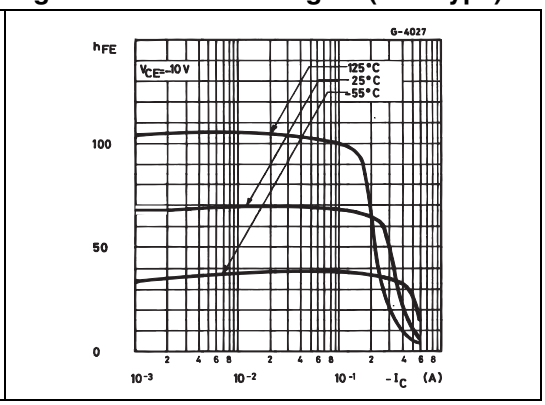


Figure 6. Collector-emitter saturation voltage (NPN type)

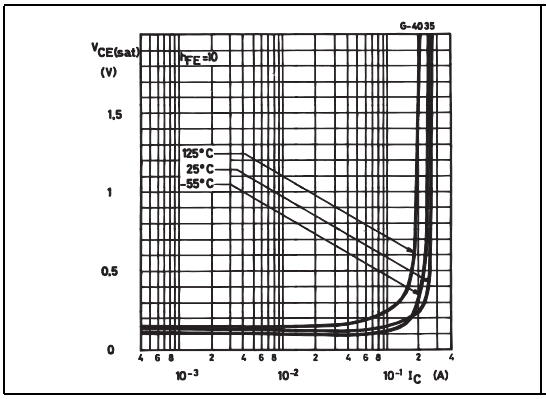
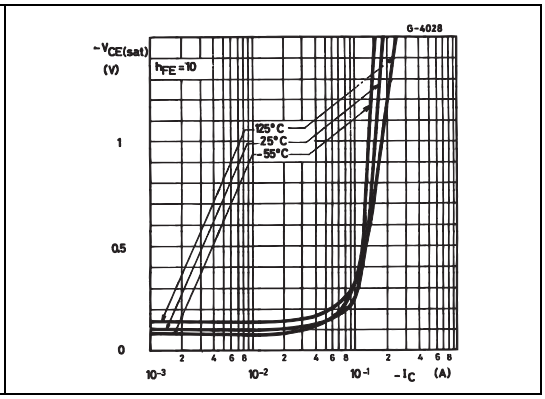


Figure 7. Base-emitter saturation voltage (PNP type)



3 Package mechanical data

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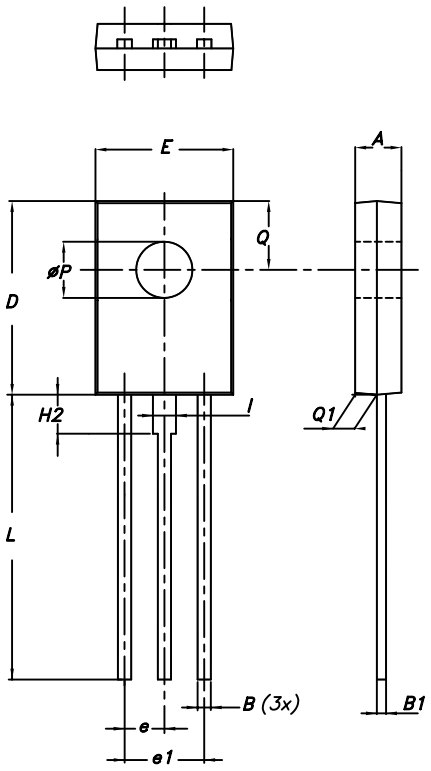
Table 5. SOT-32 (TO-126) mechanical data

Dim.	mm.		
	Min.	Typ.	Max.
A	2.40		2.90
B	0.64		0.88
B1	0.39		0.63
D	10.50		11.05
E	7.40		7.80
e	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



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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 *Table 2*, $V_{CE(sat)}$ and $V_{BE(on)}$ in *Table 4*

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