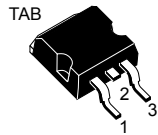
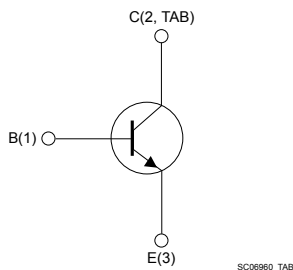


Automotive-grade low voltage NPN power transistor



D²PAK



SC06960_TAB



Features

- AEC-Q101 qualified 
- Low collector-emitter saturation voltage
- Fast switching speed

Application

- Power amplifier
- Switching circuits

Description

This device is an NPN power transistor, manufactured using new low voltage planar technology with double metal process.

The result is a transistor which boasts exceptionally high gain performance coupled with very low saturation voltage.

Product status link

[MJB44H11T4-A](#)

Product summary

Order code	MJB44H11T4-A
Marking	MJB44H11 A
Package	D²PAK
Packing	Tape and reel

1 Electrical ratings

Table 1. Absolute maximum ratings

Symbol	Parameter	Value	Unit
V_{CEO}	Collector-emitter voltage ($I_B = 0$ A)	80	V
V_{EBO}	Collector-base voltage ($I_C = 0$ A)	5	V
I_C	Collector current	10	A
I_{CM}	Collector peak current	20	A
P_{TOT}	Total power dissipation at $T_C = 25$ °C	50	W
T_{stg}	Storage temperature range	-55 to 150	°C
T_J	Maximum operating junction temperature	150	°C

Table 2. Thermal data

Symbol	Parameter	Value	Unit
R_{thJC}	Thermal resistance, junction-to-case	2.5	°C/W
R_{thJA}	Thermal resistance, junction-to-ambient	62.5	°C/W

2 Electrical characteristics

$T_J = 25\text{ }^{\circ}\text{C}$ unless otherwise specified.

Table 3. Electrical characteristics

Symbol	Parameter	Test conditions	Min.	Typ.	Max.	Unit
I_{CES}	Collector cut-off current	$V_{CE} = 80\text{ V}$, $V_{BE} = 0\text{ V}$	-	-	10	μA
I_{EBO}	Emitter cut-off current	$V_{EB} = 5\text{ V}$, $I_C = 0\text{ A}$	-	-	50	μA
$V_{CEO(sus)}^{(1)}$	Collector-emitter sustaining voltage	$I_C = 30\text{ mA}$, $I_B = 0\text{ A}$	80	-	-	V
$V_{CE(sat)}^{(1)}$	Collector-emitter saturation voltage	$I_C = 8\text{ A}$, $I_B = 0.4\text{ A}$	-	-	1	V
$V_{BE(sat)}^{(1)}$	Base-emitter saturation voltage	$I_C = 8\text{ A}$, $I_B = 0.8\text{ A}$	-	-	1.5	V
$h_{FE}^{(1)}$	DC current gain	$I_C = 2\text{ A}$, $V_{CE} = 1\text{ V}$	60	-	-	
		$I_C = 4\text{ A}$, $V_{CE} = 1\text{ V}$	40	-	-	

1. Pulse test: pulse duration $\leq 300\text{ }\mu\text{s}$, duty cycle $\leq 2\%$.

2.1 Electrical characteristics (curves)

Figure 1. Safe operating area

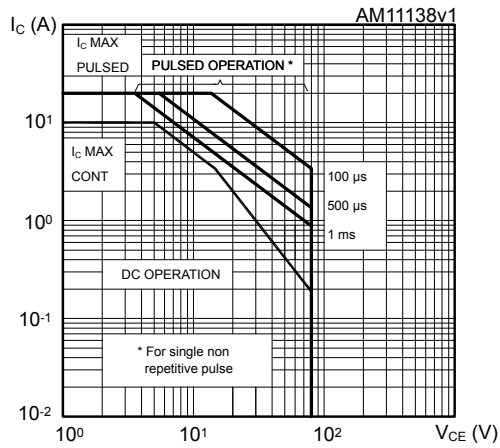


Figure 2. Derating curves

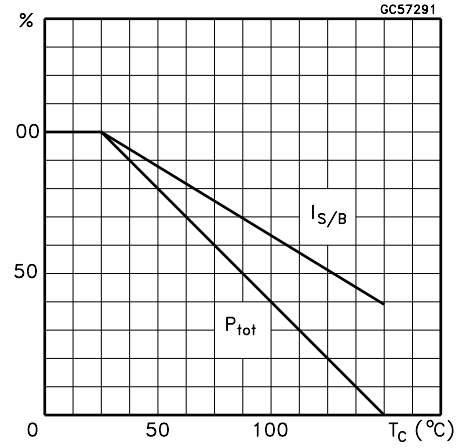


Figure 3. DC current gain ($V_{CE} = 1$ V)

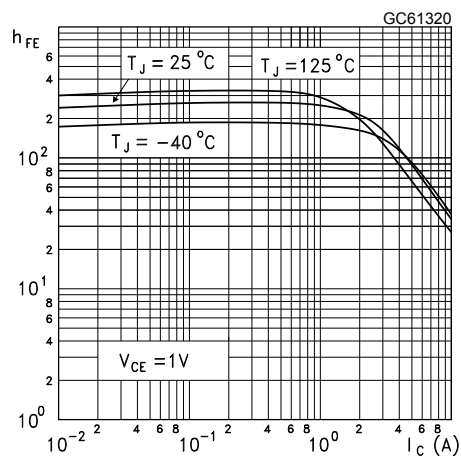
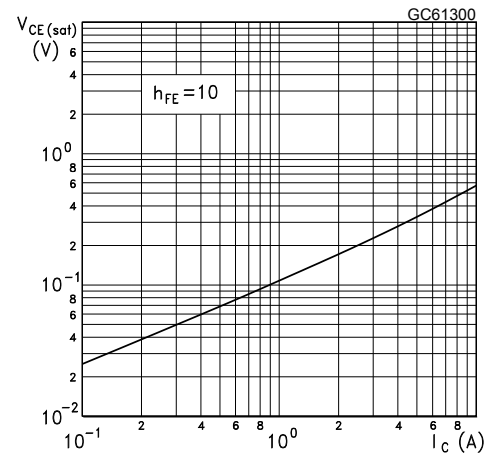


Figure 4. Collector-emitter saturation voltage

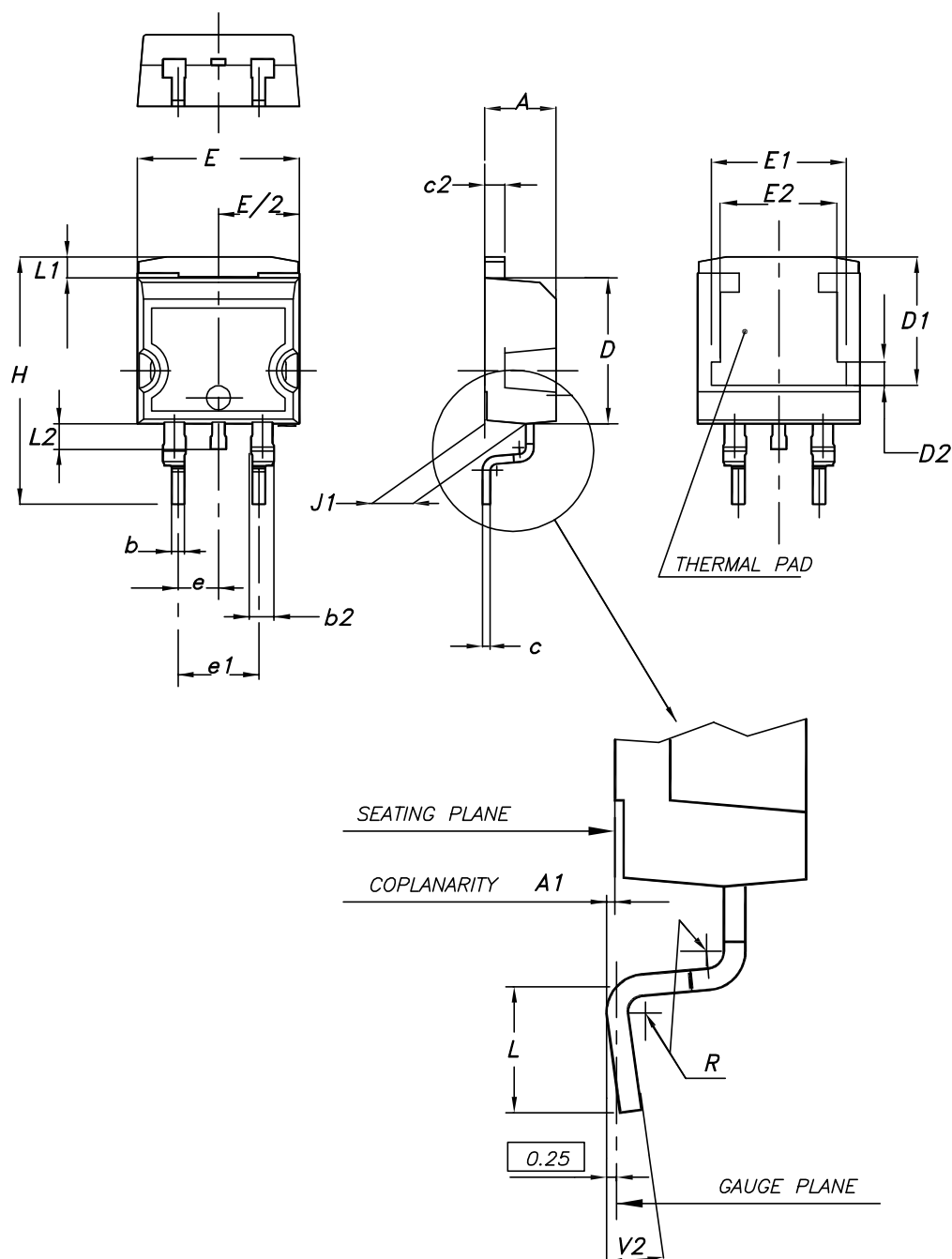


3 Package information

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.

3.1 D²PAK (TO-263) type A package information

Figure 5. D²PAK (TO-263) type A package outline

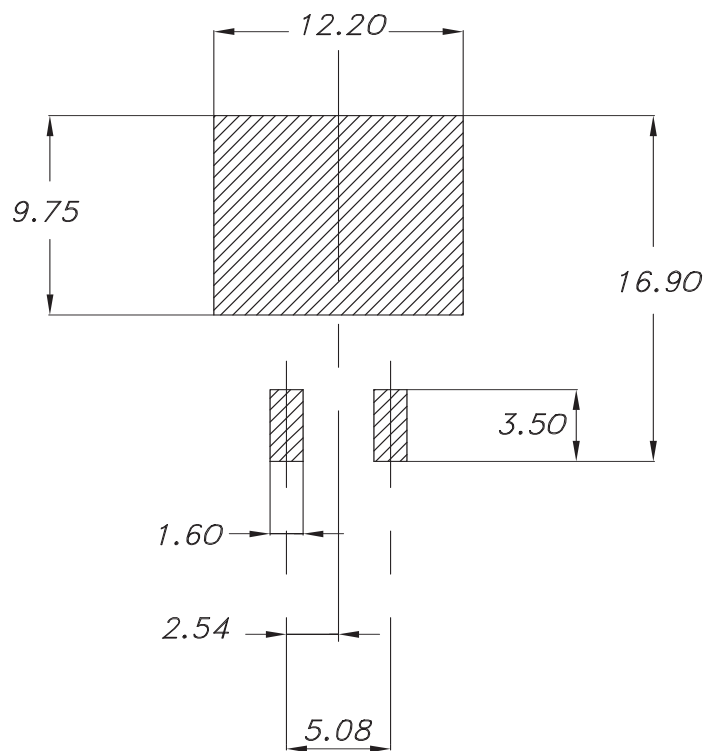


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Table 4. D²PAK (TO-263) type A package mechanical data

Dim.	mm		
	Min.	Typ.	Max.
A	4.40		4.60
A1	0.03		0.23
b	0.70		0.93
b2	1.14		1.70
c	0.45		0.60
c2	1.23		1.36
D	8.95		9.35
D1	7.50	7.75	8.00
D2	1.10	1.30	1.50
E	10.00		10.40
E1	8.30	8.50	8.70
E2	6.85	7.05	7.25
e		2.54	
e1	4.88		5.28
H	15.00		15.85
J1	2.49		2.69
L	2.29		2.79
L1	1.27		1.40
L2	1.30		1.75
R		0.40	
V2	0°		8°

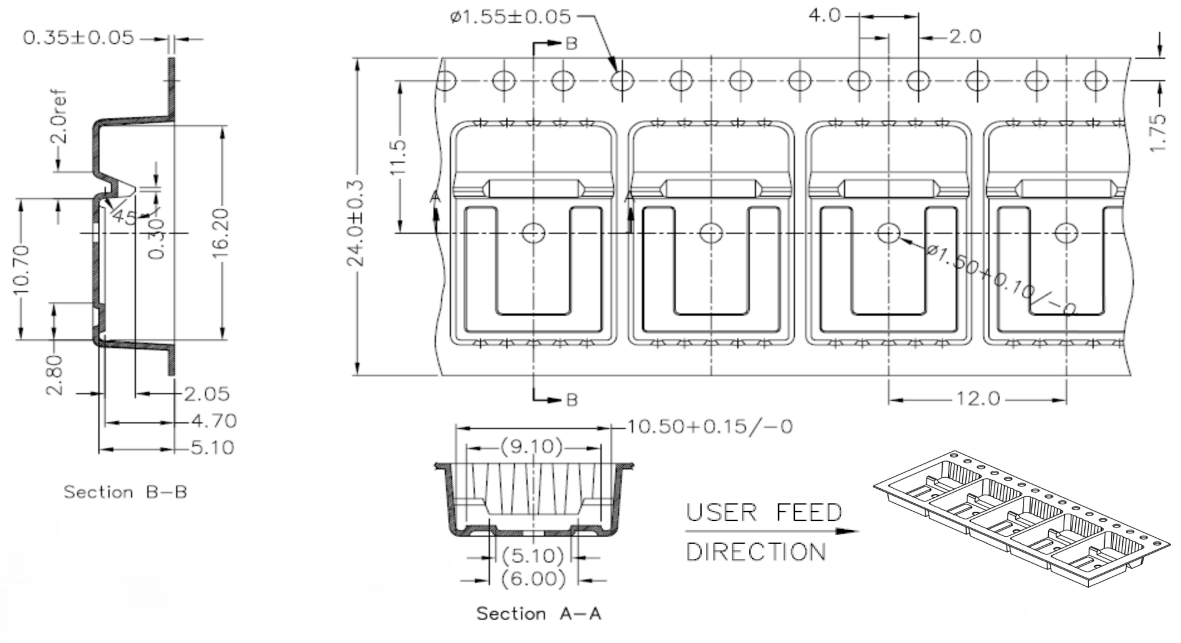
Figure 6. D²PAK (TO-263) recommended footprint (dimensions are in mm)



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3.2 D²PAK packing information

Figure 7. D²PAK tape drawing (dimensions are in mm)



0079900_14

Revision history

Table 5. Document revision history

Date	Revision	Changes
12-May-2014	1	Initial release.
17-Jun-2025	2	Updated Section 3: Package information . Minor text changes.

Contents

1	Electrical ratings	2
2	Electrical characteristics.....	3
2.1	Electrical characteristics (curves)	4
3	Package information.....	5
3.1	D ² PAK (TO-263) type A package information	5
3.2	D ² PAK packing information	8
	Revision history	9

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