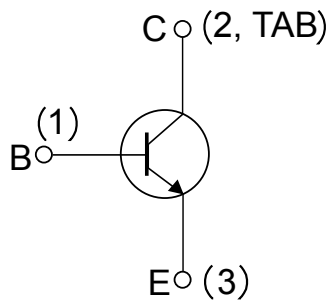
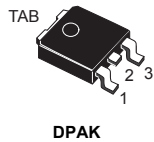


Low voltage NPN power transistor



Features

- Surface-mounting DPAK (TO-252) power package in tape and reel
- Electrically similar to MJE3055T

Application

- General purpose switching and amplifier

Description

The device is manufactured in planar technology with “base island” layout. The resulting transistor shows exceptional high gain performance coupled with very low saturation voltage.



Product status link

[MJD3055T4](#)

Product summary

Order code	MJD3055T4
Marking	MJD3055
Package	DPAK
Packing	Tape and reel

1 Electrical ratings

Table 1. Absolute maximum ratings

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-base voltage ($I_E = 0$ V)	70	V
V_{CEO}	Collector-emitter voltage ($I_B = 0$ A)	60	V
V_{EBO}	Collector-base voltage ($I_C = 0$ A)	5	V
I_C	Collector current	10	A
I_B	Base current	6	A
P_{TOT}	Total power dissipation at $T_C = 25^\circ\text{C}$	20	W
T_{stg}	Storage temperature range	-65 to 150	°C
T_J	Maximum operating junction temperature	150	

Table 2. Thermal data

Symbol	Parameter	Value	Unit
R_{thJC}	Thermal resistance, junction-to-case	6.25	°C/W
R_{thJA}	Thermal resistance, junction-to-ambient	100	°C/W

2 Electrical characteristics

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

Table 3. Electrical characteristics

Symbol	Parameter	Test conditions	Min.	Typ.	Max.	Unit
I_{CEX}	Collector cut-off current	$V_{\text{CE}} = 70 \text{ V}, V_{\text{BE}} = -1.5 \text{ V}$			20	μA
		$V_{\text{CE}} = 70 \text{ V}, T_{\text{J}} = 150^{\circ}\text{C}, V_{\text{BE}} = -1.5 \text{ V}^{(1)}$			2	mA
I_{CBO}	Collector cut-off current	$V_{\text{CB}} = 70 \text{ V}, I_{\text{E}} = 0 \text{ A}$			20	μA
		$V_{\text{CB}} = 70 \text{ V}, T_{\text{J}} = 150^{\circ}\text{C}, I_{\text{E}} = 0 \text{ A}^{(1)}$			2	mA
I_{CEO}	Collector cut-off current	$V_{\text{CE}} = 30 \text{ V}, I_{\text{B}} = 0 \text{ A}$			50	μA
I_{EBO}	Emitter cut-off current	$V_{\text{EB}} = 5 \text{ V}$ $I_{\text{C}} = 0 \text{ A}$			0.5	mA
$V_{\text{CEO(sus)}}^{(2)}$	Collector-emitter sustaining voltage	$I_{\text{C}} = 30 \text{ mA}$ $I_{\text{B}} = 0 \text{ A}$	60			V
$V_{\text{CE(sat)}}^{(2)}$	Collector-emitter saturation voltage	$I_{\text{C}} = 4 \text{ A}, I_{\text{B}} = 0.4 \text{ A}$			1.1	V
		$I_{\text{C}} = 10 \text{ A}, I_{\text{B}} = 3.3 \text{ A}$			8	
$V_{\text{BE(on)}}^{(2)}$	Base-emitter voltage	$I_{\text{C}} = 4 \text{ A}, V_{\text{CE}} = 4 \text{ V}$			1.8	V
$h_{\text{FE}}^{(2)}$	DC current gain	$I_{\text{C}} = 4 \text{ A}, V_{\text{CE}} = 4 \text{ V}$	20		100	
		$I_{\text{C}} = 10 \text{ A}, V_{\text{CE}} = 4 \text{ V}$	5			
f_{T}	Transition frequency	$I_{\text{C}} = 0.5 \text{ A}, V_{\text{CE}} = 10 \text{ V}, f = 500 \text{ kHz}$	2			MHz

1. Defined by design, not subject to production test.

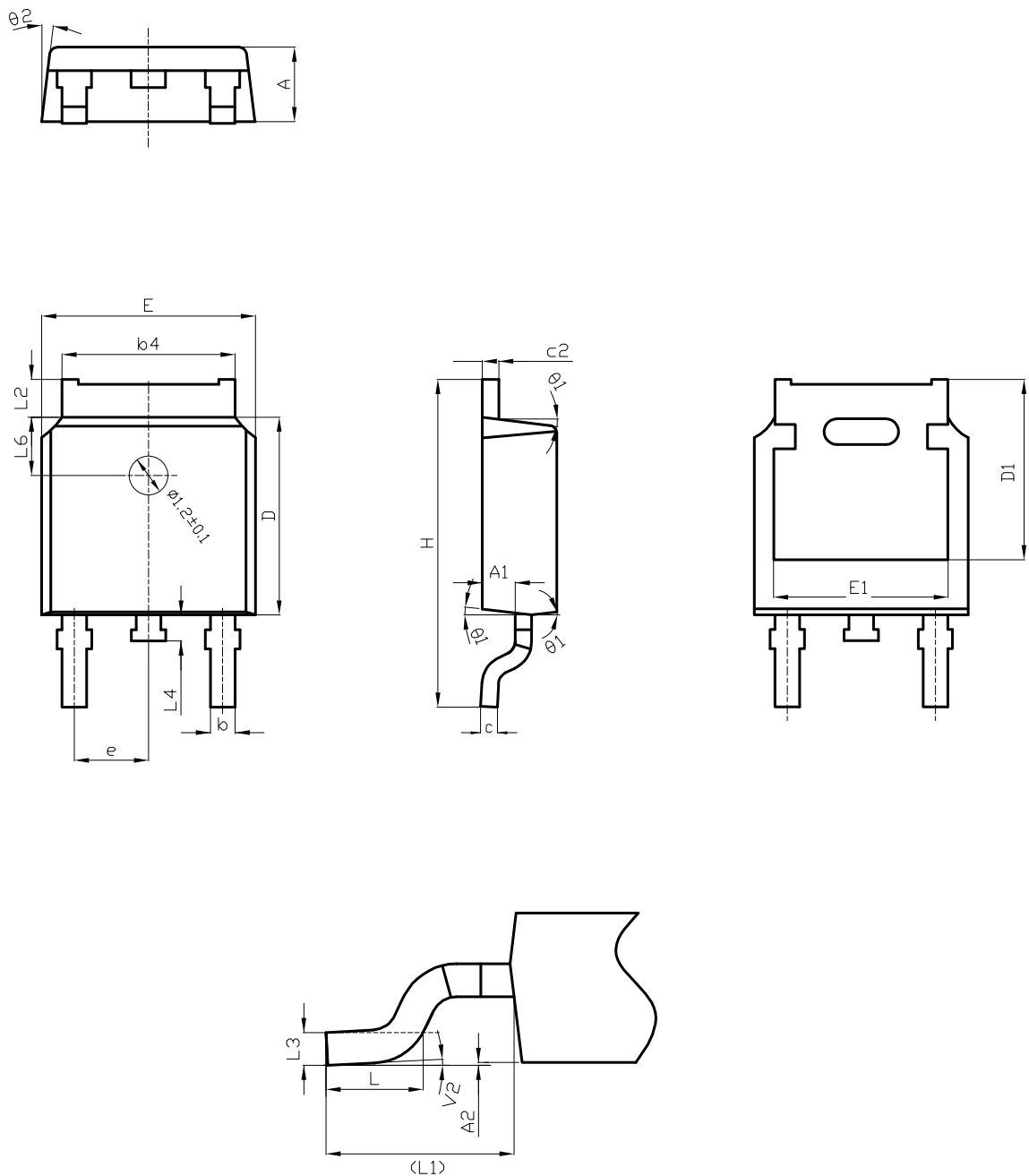
2. Pulsed: Pulse duration = 300 μs , duty cycle 1.5%.

3 Package information

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.

3.1 DPAK (TO-252) type C2 package information

Figure 1. DPAK (TO-252) type C2 package outline

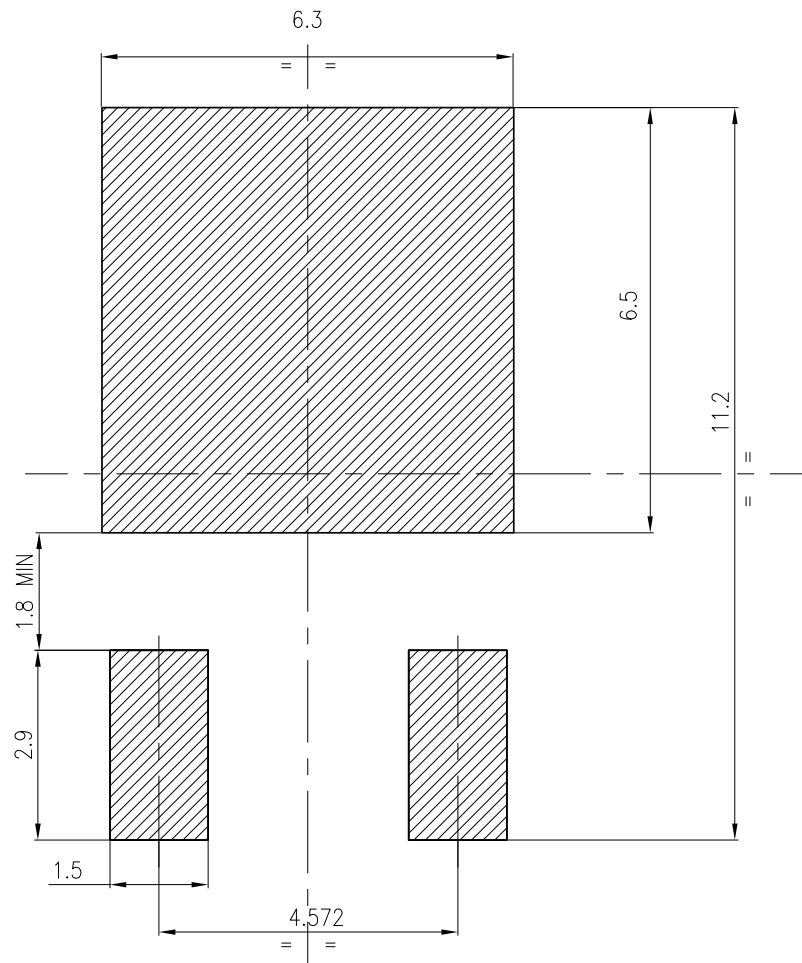


0068772_type-C2_rev30

Table 4. DPAK (TO-252) type C2 mechanical data

Dim.	mm		
	Min.	Typ.	Max.
A	2.20	2.30	2.38
A1	0.90	1.01	1.10
A2	0.00		0.10
b	0.72		0.85
b4	5.13	5.33	5.46
c	0.47		0.60
c2	0.47		0.60
D	6.00	6.10	6.20
D1	5.10		5.60
E	6.50	6.60	6.70
E1	5.20		5.50
e	2.186	2.286	2.386
H	9.80	10.10	10.40
L	1.40	1.50	1.70
L1	2.90 REF		
L2	0.90		1.25
L3	0.51 BSC		
L4	0.60	0.80	1.00
L6	1.80 BSC		
θ1	5°	7°	9°
θ2	5°	7°	9°
V2	0°		8°

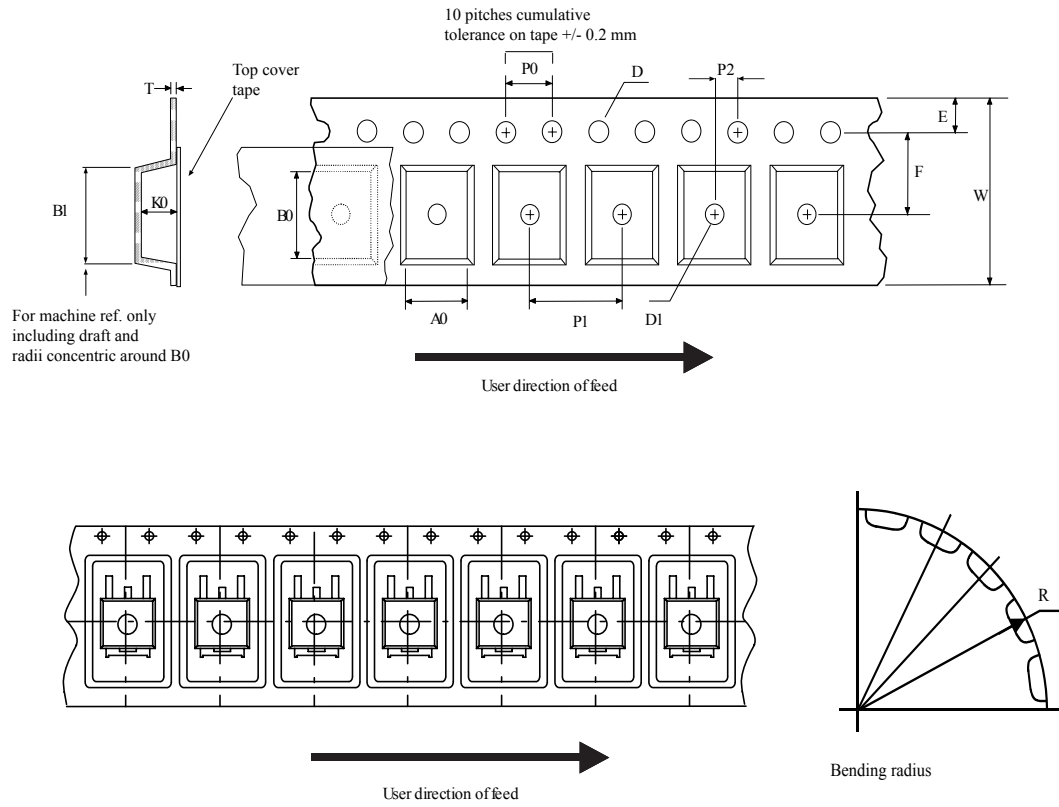
Figure 2. DPAK (TO-252) recommended footprint (dimensions are in mm)



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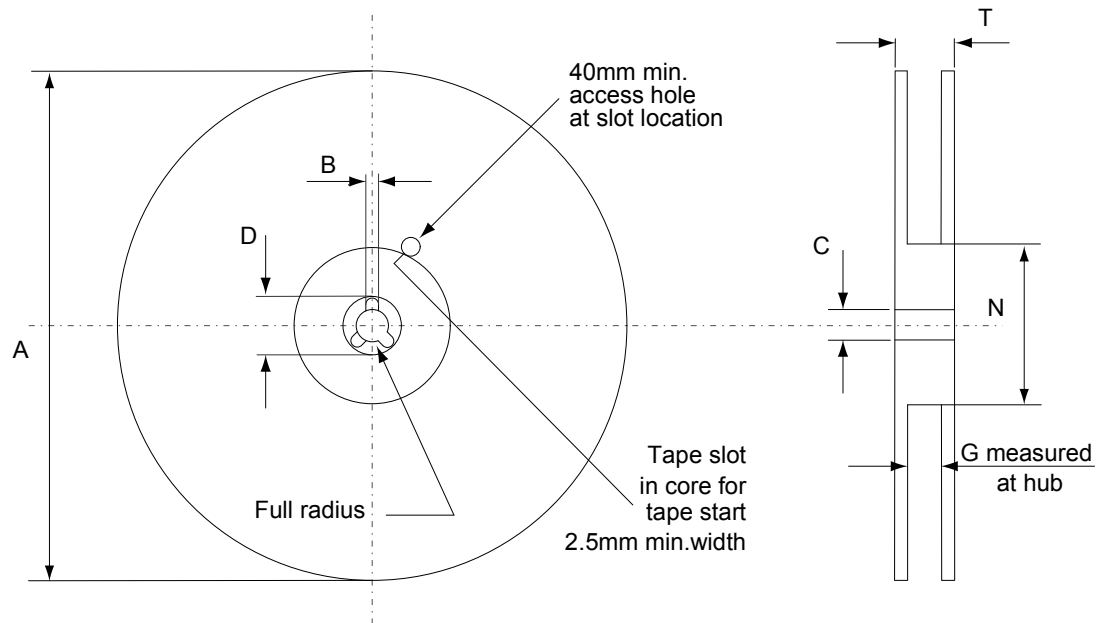
3.2 DPAK (TO-252) packing information

Figure 3. DPAK (TO-252) tape outline



AM08852v1

Figure 4. DPAK (TO-252) reel outline



AM06038v1

Table 5. DPAK (TO-252) tape and reel mechanical data

Tape			Reel		
Dim.	mm		Dim.	mm	
	Min.	Max.		Min.	Max.
A0	6.8	7	A		330
B0	10.4	10.6	B	1.5	
B1		12.1	C	12.8	13.2
D	1.5	1.6	D	20.2	
D1	1.5		G	16.4	18.4
E	1.65	1.85	N	50	
F	7.4	7.6	T		22.4
K0	2.55	2.75			
P0	3.9	4.1		Base qty.	2500
P1	7.9	8.1		Bulk qty.	2500
P2	1.9	2.1			
R	40				
T	0.25	0.35			
W	15.7	16.3			

Revision history

Table 6. Document revision history

Date	Version	Changes
29-Mar-2021	1	Initial release.

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