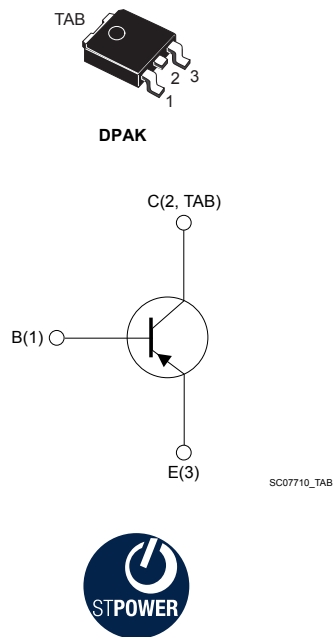


Low voltage PNP power transistor



Features

- Surface-mounting TO-252 power package in tape and reel
- Complementary to the NPN type [MJD31CT4](#)

Application

- General purpose linear and switching equipment

Description

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

Product status link

[MJD32CT4](#)

Product summary

Order code	MJD32CT4
Marking	MJD32C
Package	DPAK
Packing	Tape and reel

1 Electrical ratings

Table 1. Absolute maximum ratings

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-base voltage ($I_E = 0$ A)	-100	V
V_{CEO}	Collector-emitter voltage ($I_B = 0$ A)	-100	V
V_{EBO}	Collector-base voltage ($I_C = 0$ A)	-5	V
I_C	Collector current	-3	A
I_{CM}	Collector peak current	-5	A
I_B	Base current	-1	A
P_{TOT}	Total power dissipation at $T_C = 25$ °C	15	W
T_{stg}	Storage temperature range	-65 to 150	°C
T_J	Operating junction temperature range		°C

Table 2. Thermal data

Symbol	Parameter	Value	Unit
R_{thJC}	Thermal resistance, junction-to-case	8.3	°C/W
$R_{thJA}^{(1)}$	Thermal resistance, junction-to-ambient	50	°C/W

1. When mounted on a standard 1 inch² area of FR-4 PCB with 2-oz copper.

2 Electrical characteristics

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

Table 3. Electrical characteristics

Symbol	Parameter	Test conditions	Min.	Typ.	Max.	Unit
I_{CES}	Collector cut-off current	$V_{CE} = -100\text{ V}$, $V_{BE} = 0\text{ V}$		-	-20	μA
I_{CEO}	Collector cut-off current	$V_{CB} = -60\text{ V}$, $I_B = 0\text{ A}$		-	-50	μA
I_{EBO}	Emitter cut-off current	$V_{EB} = -5\text{ V}$, $I_C = 0\text{ A}$		-	-0.1	mA
$V_{CEO(sus)}^{(1)}$	Collector-emitter sustaining voltage	$I_C = -30\text{ mA}$, $I_B = 0\text{ A}$	-100	-		V
$V_{CE(sat)}^{(1)}$	Collector-emitter saturation voltage	$I_C = -3\text{ A}$, $I_B = -375\text{ mA}$		-	-1.2	V
$V_{BE(on)}^{(1)}$	Base-emitter on voltage	$I_C = -3\text{ A}$, $V_{CE} = -4\text{ V}$		-	-1.8	V
h_{FE}	DC current gain	$I_C = -1\text{ A}$, $V_{CE} = -4\text{ V}$	25	-		
		$I_C = -3\text{ A}$, $V_{CE} = -4\text{ V}$	10	-	50	

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

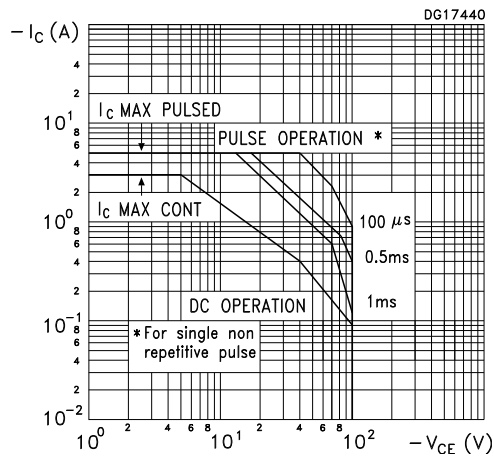


Figure 2. Derating curve

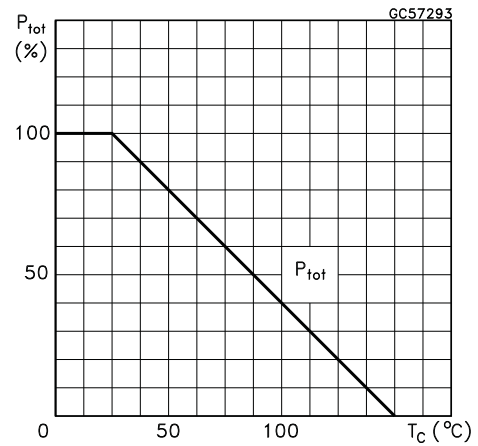


Figure 3. DC current gain ($V_{CE} = 2$ V)

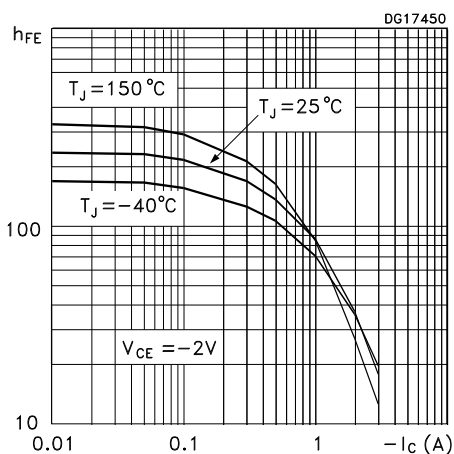


Figure 4. DC current gain ($V_{CE} = 4$ V)

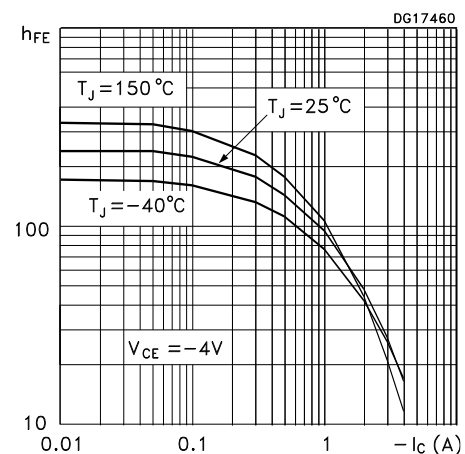


Figure 5. Collector-emitter saturation voltage

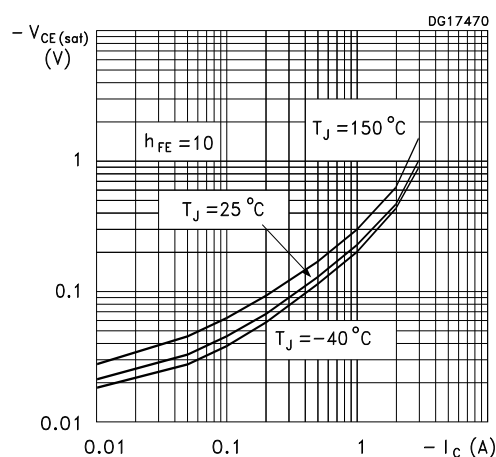


Figure 6. Base-emitter saturation voltage

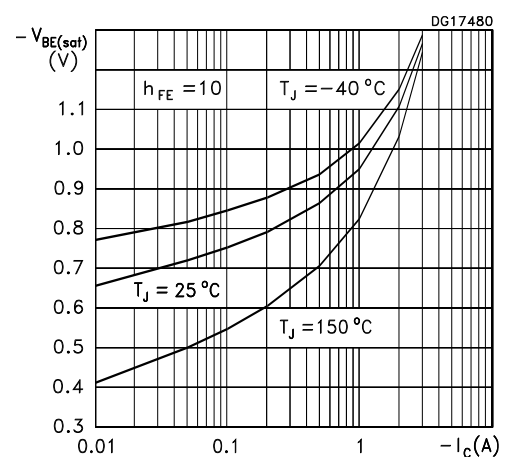


Figure 7. Base-emitter on voltage

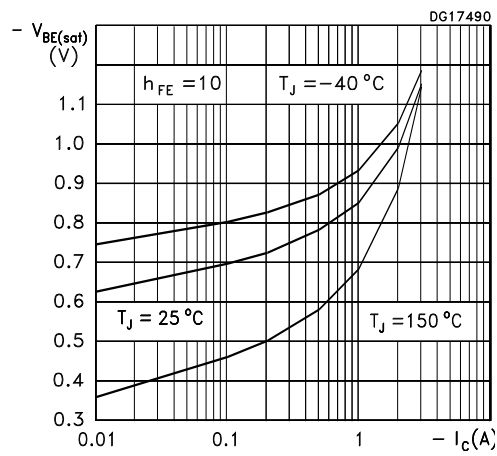


Figure 8. Resistive load switching time (on)

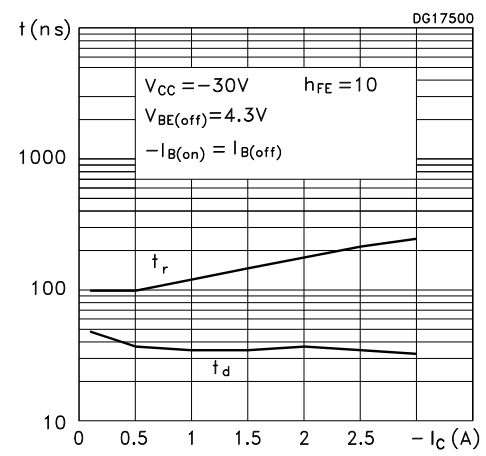
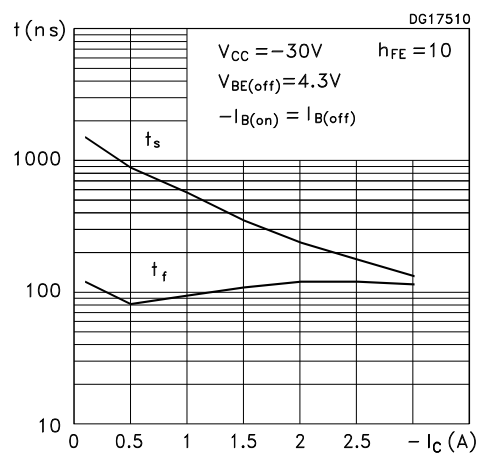


Figure 9. Resistive load switching time (off)

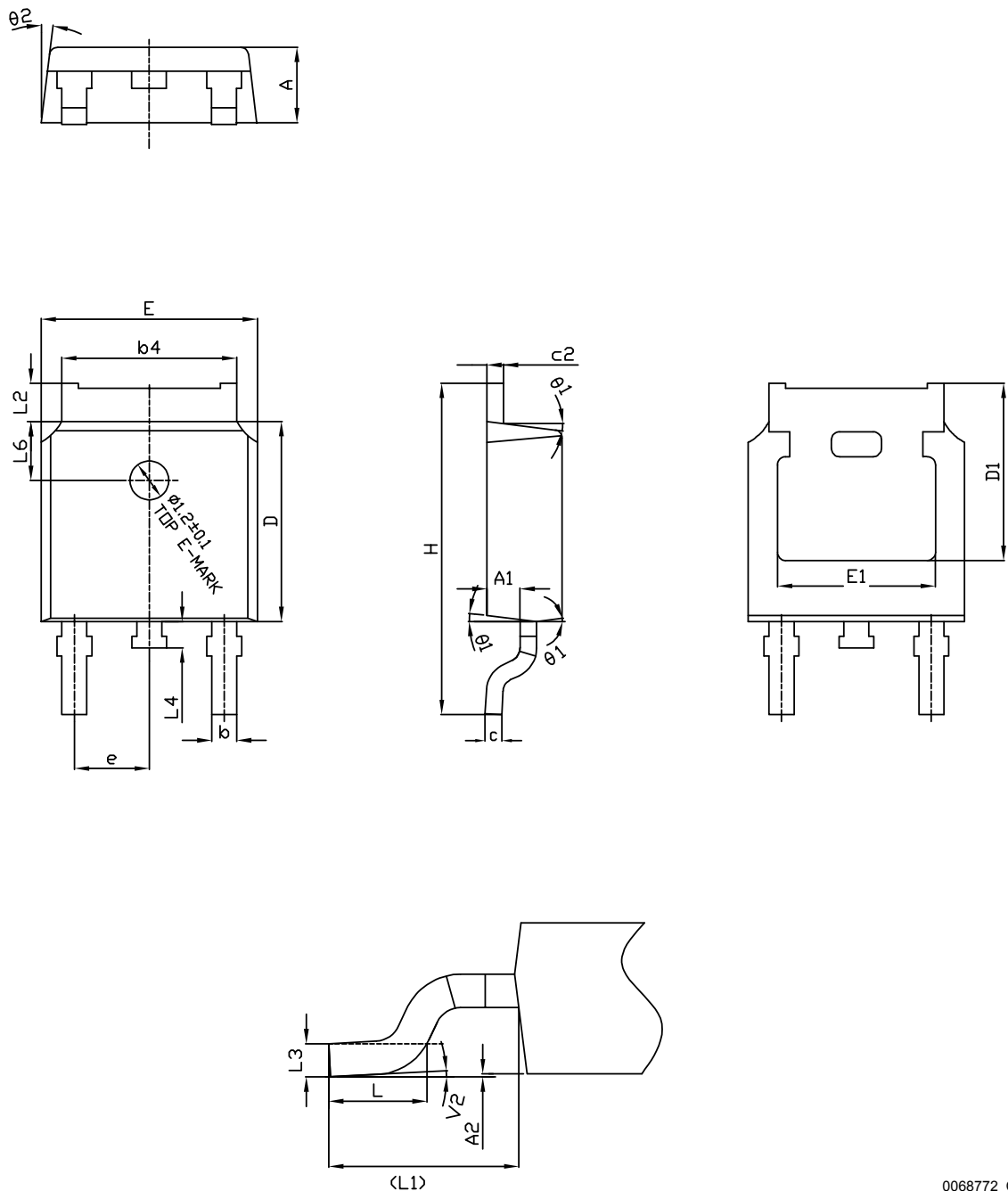


3 Package information

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 DPAK (TO-252) type C package information

Figure 10. DPAK (TO-252) type C package outline



0068772_C_36

Table 4. DPAK (TO-252) type C 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	5.15	5.40	5.65
E	6.50	6.60	6.70
E1	4.70	4.85	5.00
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°

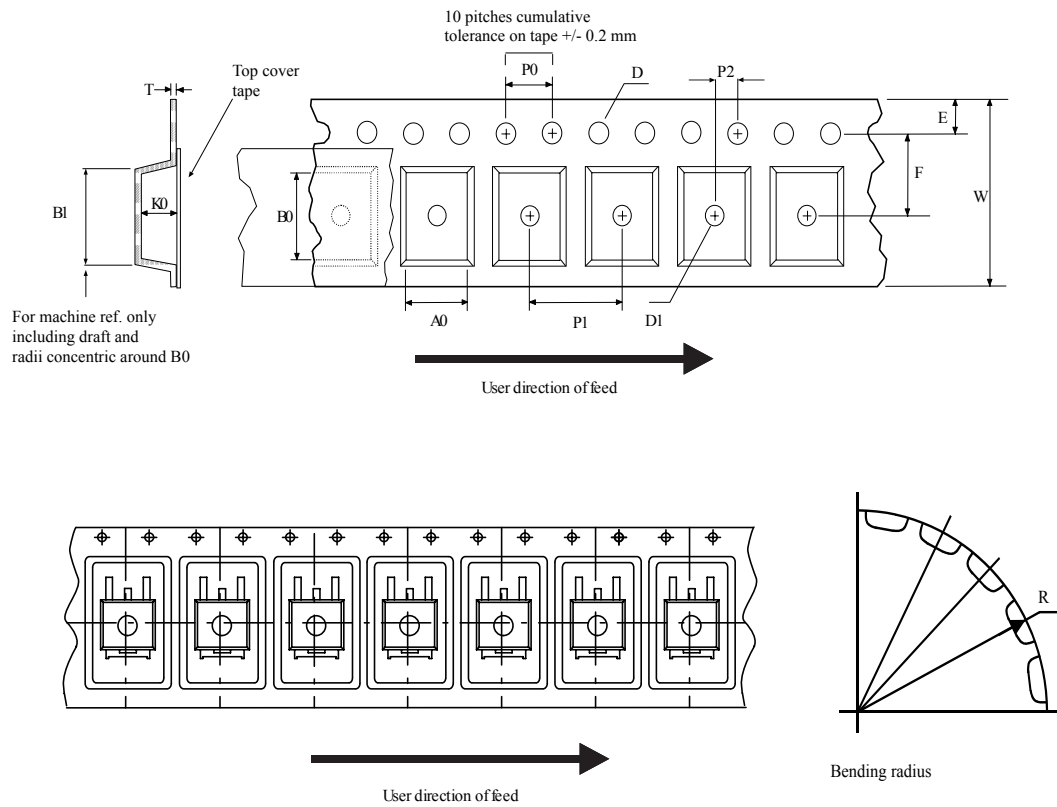
Technical drawing of a mechanical part. The drawing shows a top view and a side view. The top view is a rectangle with a width of 6.3 and a height of 11.2. The side view is a rectangle with a width of 1.5 and a height of 2.9. The part has a central vertical slot with a width of 4.572. The distance from the left edge to the center of the slot is 1.8 MIN. The distance from the center of the slot to the right edge is 6.5. The drawing includes section lines (hatching) and a section line label 'A'.

2) The device must be positioned within $\oplus 0.05 \text{ A B}$

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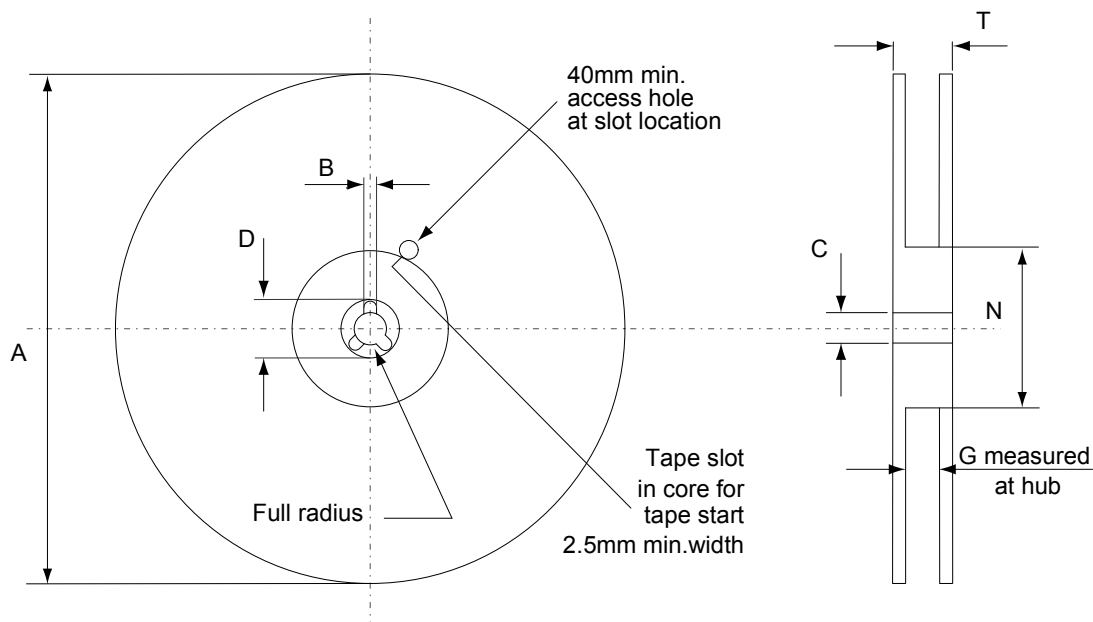
3.2 DPAK (TO-252) packing information

Figure 12. DPAK (TO-252) tape outline



AM08852v1

Figure 13. 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	Revision	Changes
04-Jul-2024	1	First release.
16-Jun-2025	2	Updated Table 3 . Electrical characteristics. Updated Section 3.1 : DPAK (TO-252) type C package information. Minor text changes.

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