

Low voltage PNP power transistor

General features

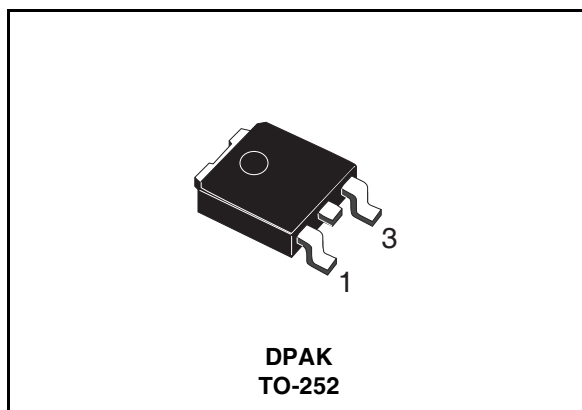
- This device is qualified for automotive application
- Surface-mounting TO-252 power package in tape & reel
- NPN type is MJD31CT4-A

Applications

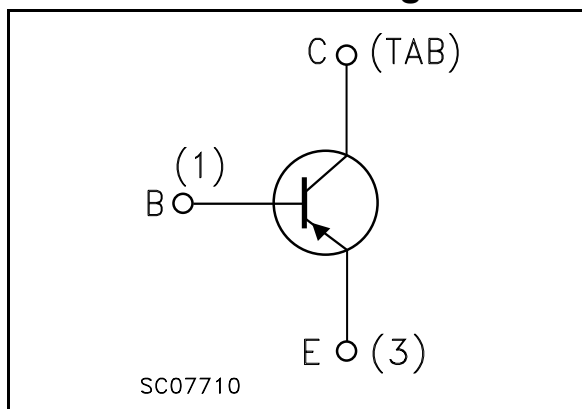
- General purpose switching and amplifier transistor

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.



Internal schematic diagram



Order codes

Part Number	Marking	Package	Packaging
MJD32CT4-A	MJD32C	DPAK	Tape & reel

1 Electrical ratings

Table 1. Absolute maximum rating

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

2 Electrical characteristics

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

Table 2. Electrical characteristics

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

Note (1) Pulsed duration = 300 μs , duty cycle $\leq 1.5\%$

2.1 Electrical characteristic (curves)

Figure 1. Safe operating area

Figure 2. Derating curve

