

MJD31B/31C MJD32B/32C

COMPLEMENTARY SILICON POWER TRANSISTORS

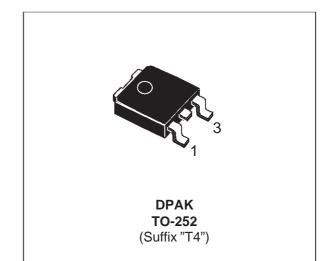
- STMicroelectronics PREFERRED SALESTYPES
- SURFACE-MOUNTING TO-252 (DPAK) POWER PACKAGE IN TAPE & REEL (SUFFIX "T4")
- ELECTRICALLY SIMILAR TO TIP31B/C AND TIP32B/C

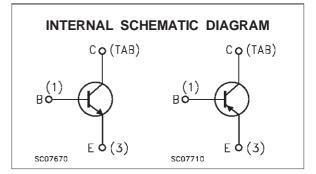
APPLICATIONS

 GENERAL PURPOSE SWITCHING AND AMPLIFIER TRANSISTORS

DESCRIPTION

The MJD31B and MJD31C and the MJD32B and MJD32C form complementary NPN-PNP pairs. They are manufactured using Epitaxial Base technology for cost-effective performance.





ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Va	Unit		
		NPN	MJD31B	MJD31C	1
		PNP	MJD32B	MJD32C	1
V _{CBO}	Collector-Base Voltage (I _E = 0)		80	100	V
V _{CEO}	Collector-Emitter Voltage $(I_B = 0)$		80	100	V
V _{EBO}	Emitter-Base Voltage $(I_C = 0)$			V	
Ι _C	Collector Current			A	
I _{CM}	Collector Peak Current		:	A	
IB	Base Current			A	
P _{tot}	Total Dissipation at $T_c = 25$ °C		1	W	
T _{stg}	Storage Temperature		-65 t	°C	
Tj	Max. Operating Junction Temperature	1	°C		

For PNP types the values are intented negative.

THERMAL DATA

R _{thj-case}	Thermal Resistance	Junction-case	Max	8.33	°C/W
R _{thj-amb}	Thermal Resistance	Junction-ambient	Max	100	°C/W

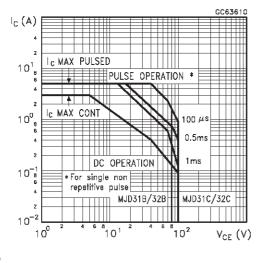
ELECTRICAL CHARACTERISTICS (T_{case} = 25 °C unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Тур.	Max.	Unit
I _{CES}	Collector Cut-off Current ($V_{BE} = 0$)	V _{CE} = Max Rating			20	μΑ
ICEO	Collector Cut-off Current ($I_B = 0$)	$V_{CE} = 60 V$			50	μA
I _{EBO}	Emitter Cut-off Current $(I_C = 0)$	$V_{EB} = 5 V$			0.1	mA
$V_{CEO(sus)}$	Collector-Emitter Sustaining Voltage	Ic = 30 mA for MJD31B/32B for MJD31C/32C	80 100			V V
V _{CE(sat)} *	Collector-Emitter Saturation Voltage	$I_{\rm C} = 3 \text{ A}$ $I_{\rm B} = 375 \text{ mA}$			1.2	V
V _{BE(on)} *	Base-Emitter Voltage	$I_{C} = 3 A$ $V_{CE} = 4 V$			1.8	V
h _{FE} *	DC Current Gain	$ I_C = 1 \ A \qquad V_{CE} = 4 \ V \\ I_C = 3 \ A \qquad V_{CE} = 4 \ V $	25 10		50	
h _{fe}	Dynamic Current Gain		20 3			

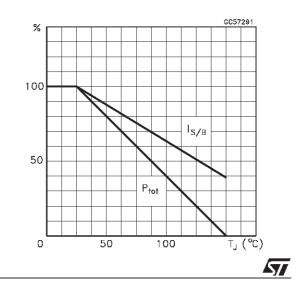
* Pulsed: Pulse duration = 300 μ s, duty cycle \leq 2 %

For PNP type voltage and current values are negative.

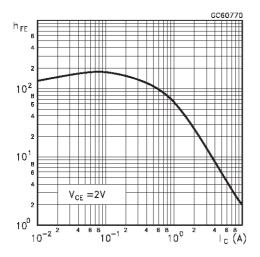
Safe Operating Area



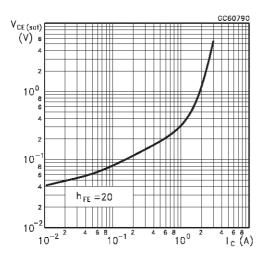
Derating Curves



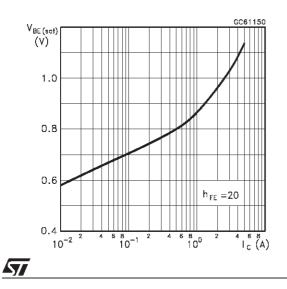
DC Current Gain (NPN type)



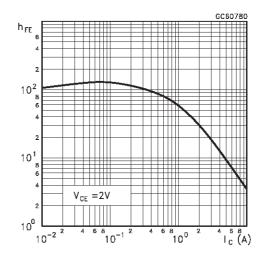
Collector-Emitter Saturation Voltage (NPN type)



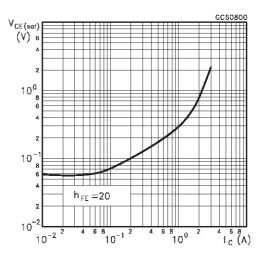
Base-Emitter Saturation Voltage (NPN type)



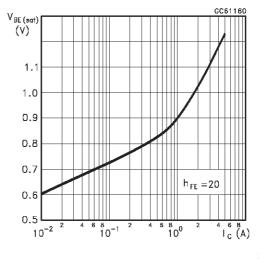
DC Current Gain (PNP type)



Collector-Emitter Saturation Voltage (PNP type)

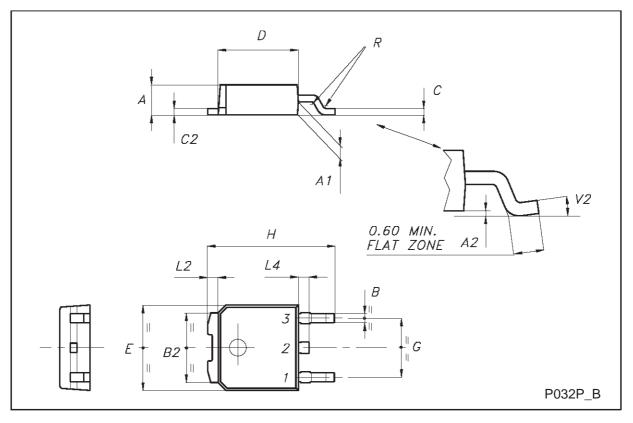


Collector-Base Capacitance (PNP type)



DIM.		mm			inch	
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
А	2.20		2.40	0.087		0.094
A1	0.90		1.10	0.035		0.043
A2	0.03		0.23	0.001		0.009
В	0.64		0.90	0.025		0.035
B2	5.20		5.40	0.204		0.213
С	0.45		0.60	0.018		0.024
C2	0.48		0.60	0.019		0.024
D	6.00		6.20	0.236		0.244
E	6.40		6.60	0.252		0.260
G	4.40		4.60	0.173		0.181
Н	9.35		10.10	0.368		0.398
L2		0.8			0.031	
L4	0.60		1.00	0.024		0.039
V2	0°		8°	0°		0°





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