Epitaxial Planar NPN Transistor **MJD31C**

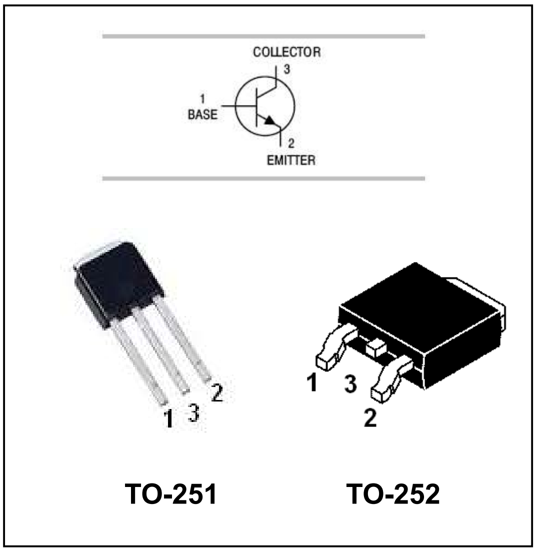
FEATURES

- Low formed for surface mount application.
- Electrically similar to popular and TIP31C.
- Straight Lead.

Lead-free

APPLICATIONS

- General purpose amplifier.
- Low speed switching applications.



MAXIMUM RATING operating temperature range applies unless otherwise specified

Symbol	**Parameter**	**Value**	**Units**
V_{CBO}	Collector-Base Volage	100	V
V_{CEO}	Collector-Emitter Voltage	100	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current -Continuous	3	A
I_{CP}	Collector Current -Peak	5	A
I_B	Base Current	1	A
P_C	Collector Power Dissipation	1.25	W
T_j ,T_{stg}	Junction and Storage temperature range	-65 to +150	℃

Epitaxial Planar NPN Transistor MJD31C

ELECTRICAL CHARACTERISTICS@ Ta=25℃ unless otherwise specified

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-emitter sustaining voltage	$V_{CEO(sus)}$	I_C=30mA,I_B=0	100			V
Collector cut-off current	I_{CEO}	V_{CE}=60V,I_B=0			50	uA
Collector cut-off current	I_{CES}	V_{CE}=100V,V_{BE}=0			20	uA
Emitter cut-off current	I_{EBO}	V_{EB}=5V,I_C=0			1	mA
DC current gain	h_{FE}	V_{CE}=4V,I_C=1A V_{CE}=4V,I_C=3A	25 10		 50	
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=3A,I_B=375mA			1.2	V
Base-emitter on voltage	$V_{BE(on)}$	V_{CE}=4V,I_C=3A			1.8	V
Transition frequency	f_T	V_{CE}=10V,I_C=0.5A	3			MHz

TYPICAL CHARACTERISTICS @ Ta=25℃ unless otherwise specified

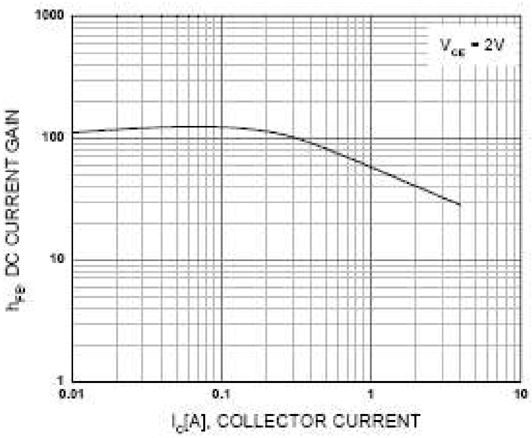


Figure 1. DC current Gain

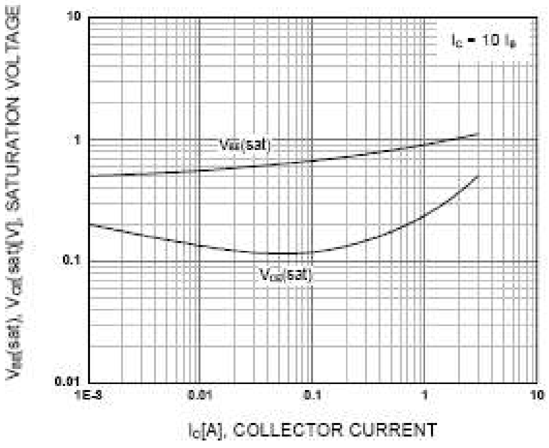


Figure 2. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

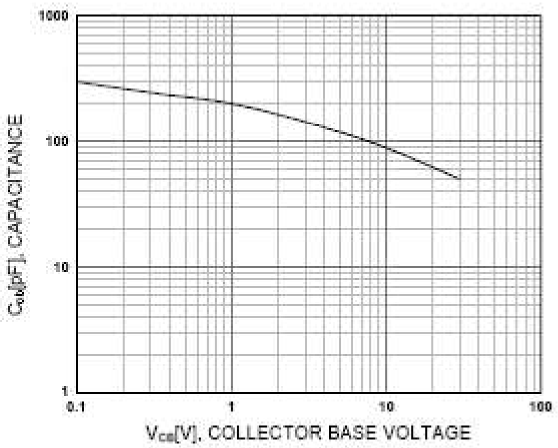


Figure 3. Collector Capacitance

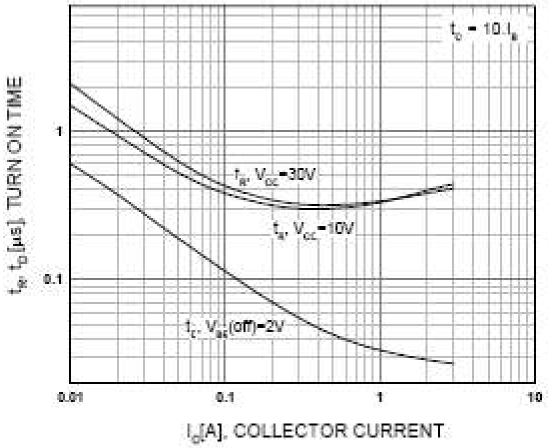


Figure 4. Turn On Time

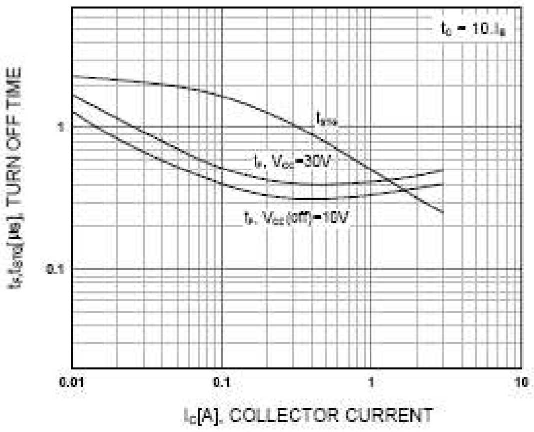


Figure 5. Turn Off Time

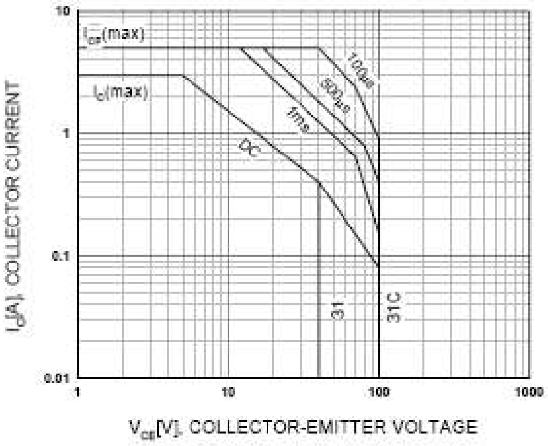
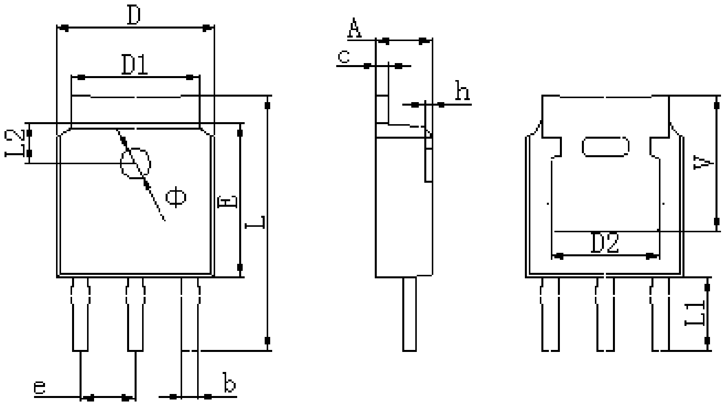


Figure 6. Safe Operating

Epitaxial Planar NPN Transistor MJD31C

PACKAGE OUTLINE

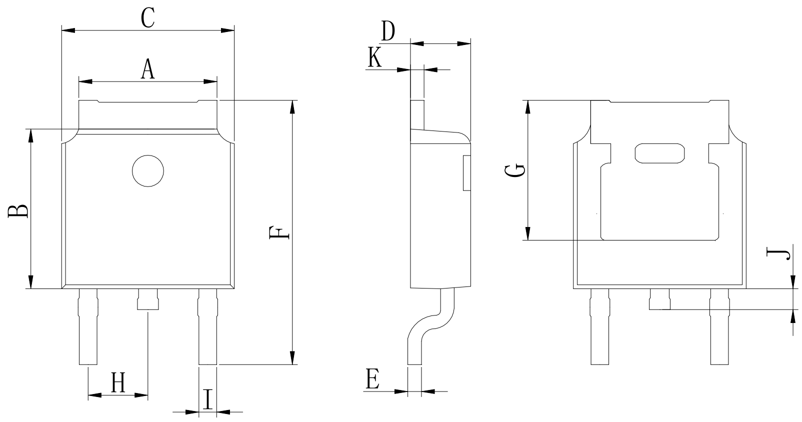
Plastic surface mounted package TO-251



TO-251		
A	2.200	2.400
b	0.500	0.700
c	0.460	0.580
D	6.500	6.700
D1	5.100	5.460
D2	4.830 Typ.	
E	6.000	6.200
e	2.186	2.386
L	12.000	12.600
L1	5.100 Typ.	
L2	1.400	1.700
Φ	1.100	1.300
h	0.000	0.300
V	5.350 Typ.	
All Dimensions in mm		

PACKAGE OUTLINE

Plastic surface mounted package TO-252

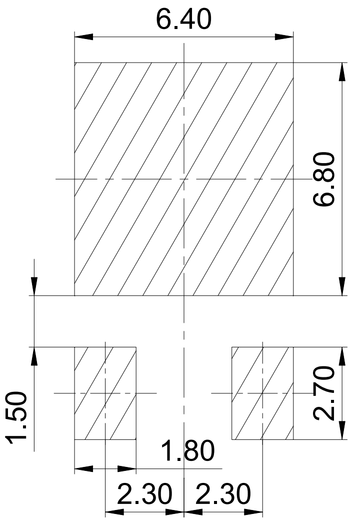


TO-252		
A	4.95	5.59
B	5.40	6.63
C	6.05	7.10
D	2.20	2.40
E	0.40	0.61
F	8.80	10.60
G	5.35 Typ.	
H	1.98	2.59
I	0.50	0.90
J	0.50	1.20
K	0.45	0.89
All Dimensions in mm		

Epitaxial Planar NPN Transistor

MJD31C

SOLDERING FOOTPRINT



Unit:mm

PACKAGE INFORMATION

Device	Package	Shipping
MJD31C	TO-251/252	80PCS/Tube
	TO-252	2500PCS/Tape&Reel