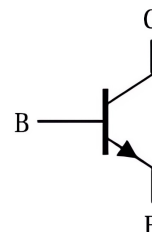


Features

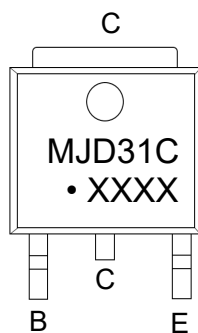
- Designed for General Purpose Amplifier and Low Speed Switching Applications
- Lead Formed for Surface Mount Applications in Plastic Sleeves (No Suffix)
- Straight Lead Version in Plastic Sleeves ("–1" Suffix)
- Lead Formed Version in 16 mm Tape and Reel ("T4" Suffix)
- Electrically Similar to Popular TIP31 and TIP32 Series



TO-252-2L top view



Schematic diagram



Marking and pin assignment



Halogen-Free

Maximum Ratings(Ta=25°C unless otherwise noted)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	100	V
V_{CEO}	Collector-Emitter Voltage	100	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current	3	A
I_{CM}	Collector Current -Pulsed	5	A
P_C	Collector Power Dissipation	1.25	W
P_{tot}	Total Power Dissipation ($T_C=25^\circ\text{C}$)	15	W
T_J, T_{stg}	Operation Junction and Storage Temperature Range	-55~+150	°C

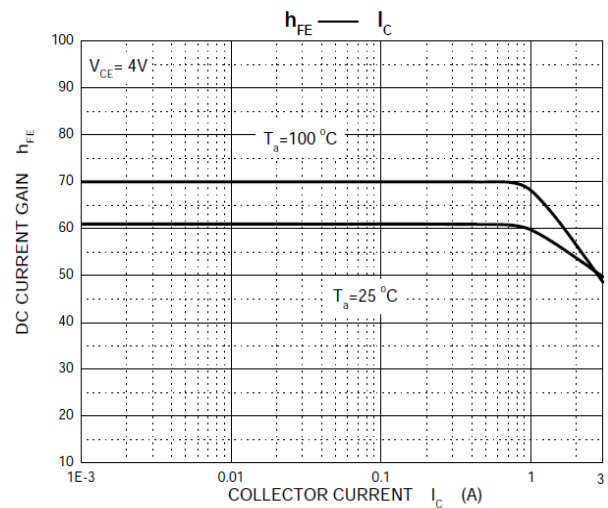
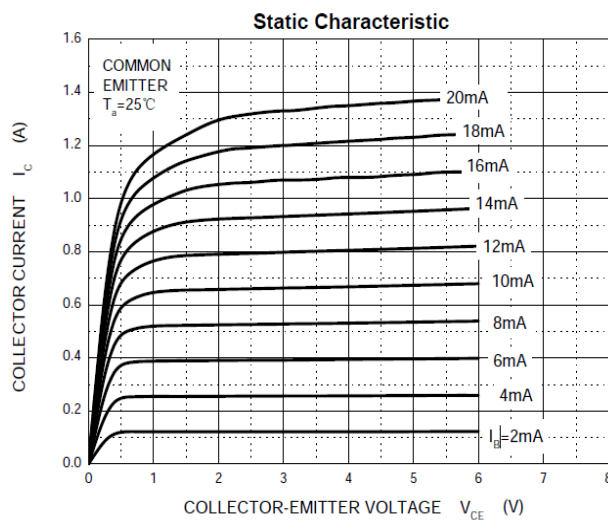
Ordering Information (Example)

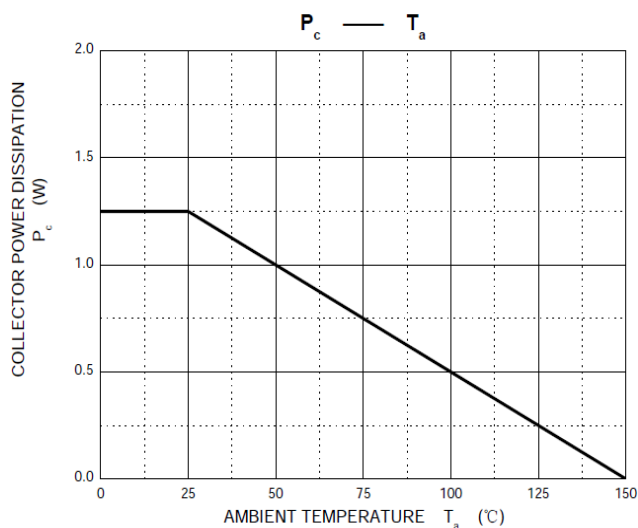
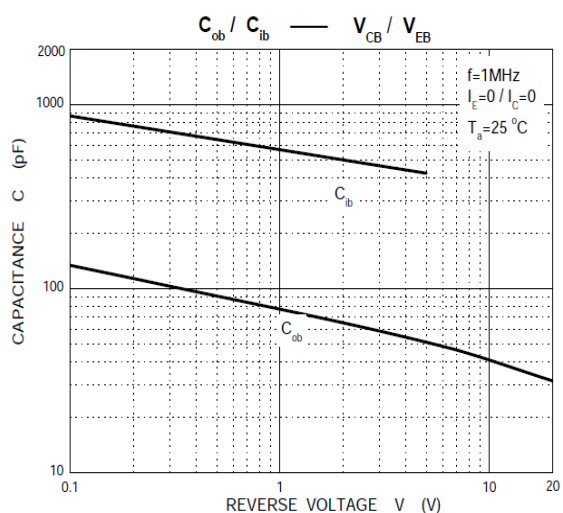
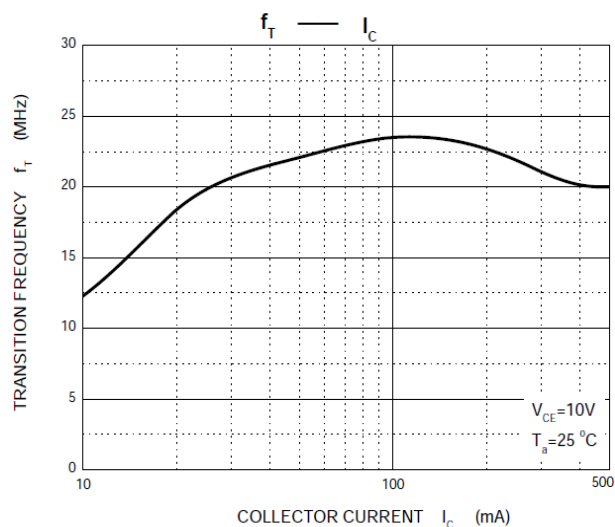
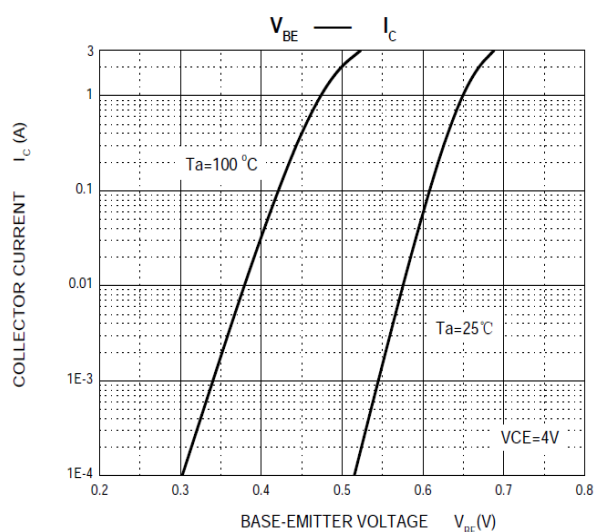
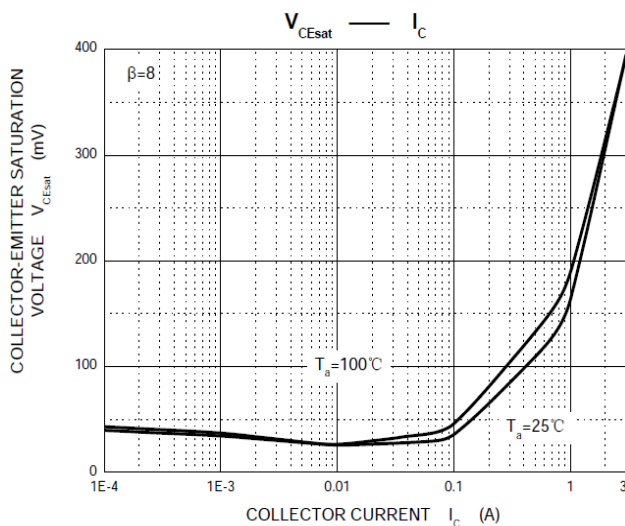
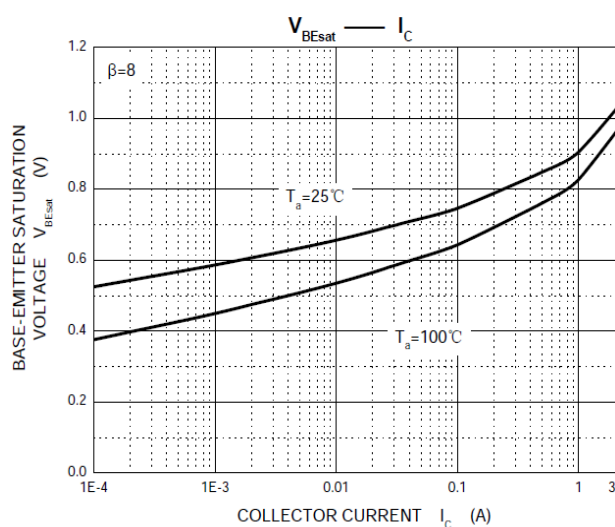
Type	Package	Marking	Minimum Package(pcs)	Inner Box Quantity(pcs)	Outer Carton Quantity(pcs)	Delivery Mode
MJD31C	TO-252-2L	MJD31C	2,500	5,000	35,000	13"reel

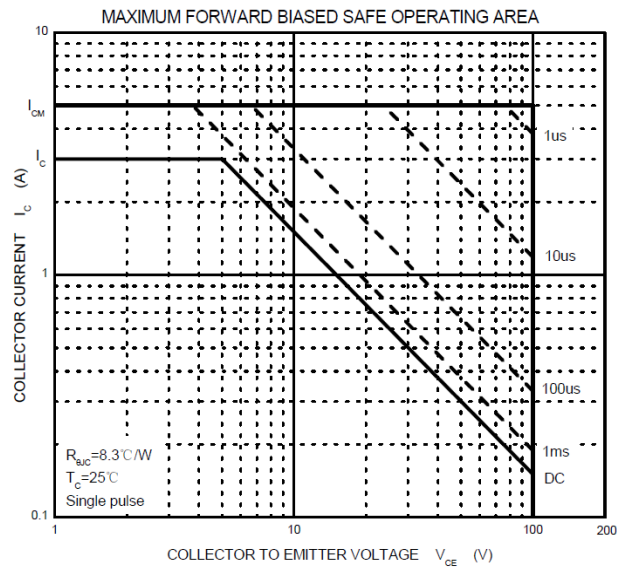
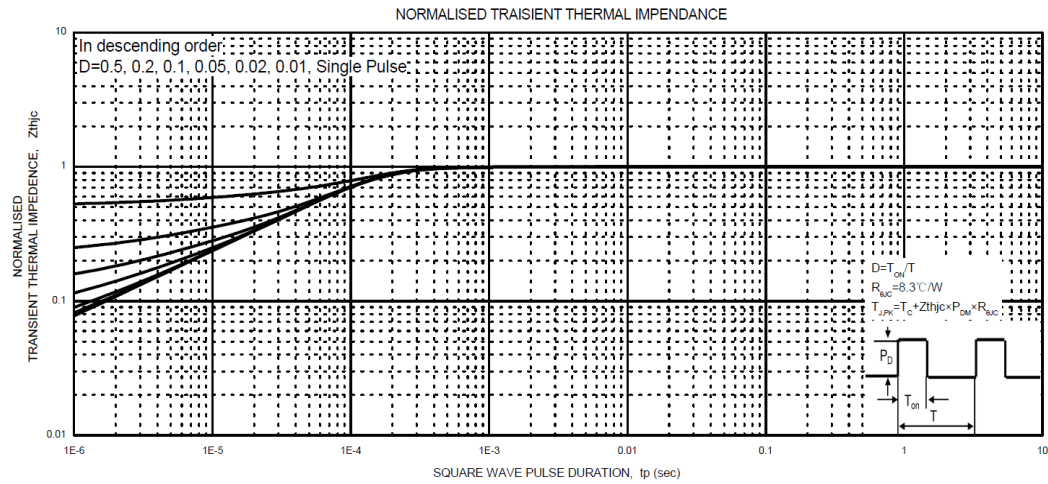
Electrical Characteristics (T_J=25°C unless otherwise noted)

Symbol	Parameter	Condition	Min	Typ	Max	Unit
$V_{(BR)CBO}$	Collector-base breakdown voltage	$I_C=1mA, I_E=0$	100	--	--	V
$V_{CEO(sus)}$	Collector-emitter breakdown voltage*	$I_C=30mA, I_B=0$	100	--	--	V
$V_{(BR)EBO}$	Emitter-base breakdown voltage	$I_E=1mA, I_C=0$	5	--	--	V
I_{CES}	Collector cut-off current	$V_{CE}=100V, V_{EB}=0$	--	--	20	μA
I_{CEO}	Collector cut-off current	$V_{CE}=60V, I_B=0$	--	--	50	μA
I_{EBO}	Emitter cut-off current	$V_{EB}=5V, I_C=0$	--	--	1	mA
$h_{FE(1)}$	DC current gain	$V_{CE}=4V, I_C=1A$	25	--	--	
$h_{FE(2)}$		$V_{CE}=4V, I_C=3A$	15	--	75	
$V_{CE(sat)}$	Collector-emitter saturation voltage	$I_C=3A, I_B=0.375A$	--	--	1.2	V
$V_{BE(on)}$	Base-emitter voltage	$V_{CE}=4V, I_C=3A$	--	--	1.8	V
f_T	Transition frequency	$V_{CE}=10V, I_C=0.5A, f_T=1KHz$	3	--	--	MHz

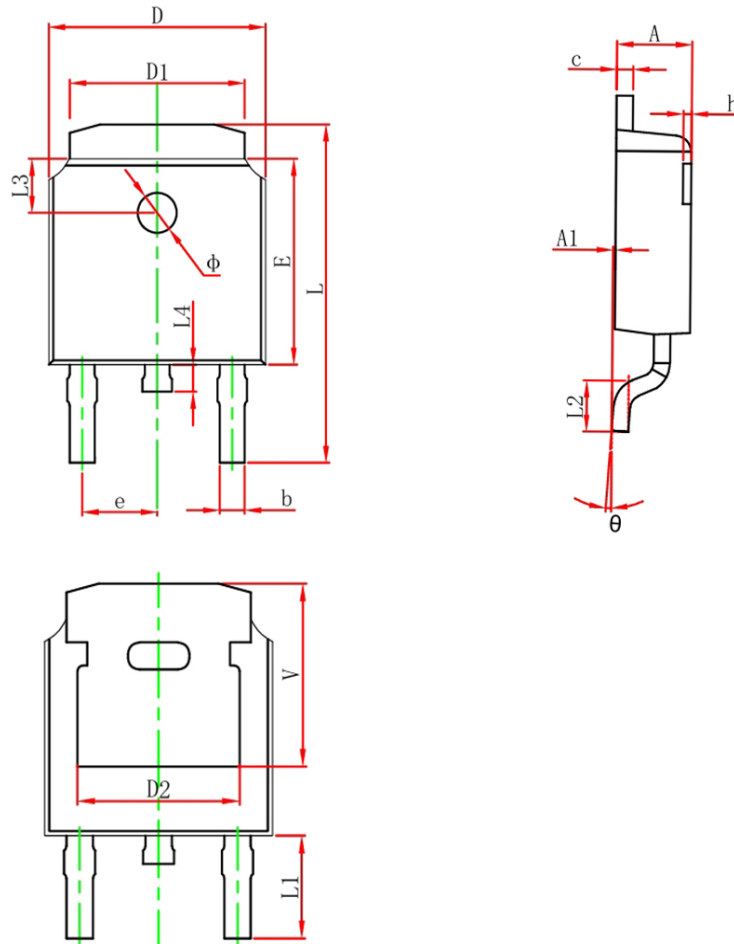
* Pulse Test: PW $\leq$ 300 μ s, Duty Cycle $\leq$ 2%.

Typical Operating Characteristics






TO-252-2L Package information



Symbol	Dimensions in Millimeters(mm)		Dimensions In Inches	
	Min	Max	Min	Max
A	2.200	2.400	0.087	0.094
A1	0.000	0.127	0.000	0.005
b	0.635	0.770	0.025	0.030
c	0.450	0.580	0.018	0.023
D	6.500	6.700	0.256	0.264
D1	5.100	5.460	0.201	0.215
D2	4.830 REF.		0.190 REF.	
E	6.000	6.200	0.236	0.244
e	2.186	2.386	0.086	0.094
L	9.712	10.312	0.386	0.406
L1	2.900 REF.		0.114 REF.	
L2	1.400	1.700	0.055	0.067
L3	1.600 REF.		0.063 REF.	
L4	0.600	1.000	0.024	0.039
φ	1.100	1.300	0.043	0.051
θ	0°	8°	0°	8°
h	0.000	0.300	0.000	0.012
V	5.250 REF.		0.207 REF.	