Micro Commercial Components
21201 Itasca Street Chatsworth
CA 91311
Phone: (818) 701-4933
Fax: (818) 701-4939

MJ413
MJ423
MJ431

10 Amp
NPN Silicon
Power Transistors
125W

Features

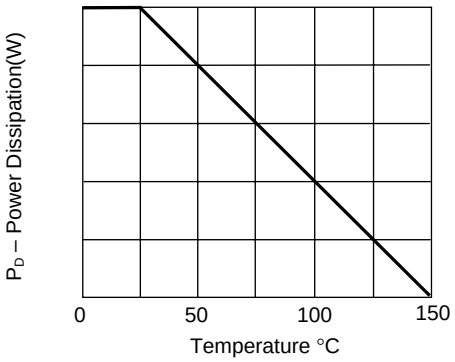
- High Collector-Emitter Voltage V_{CES}=400V
- DC Current Gain Specified 3.5A
- High Frequency Response to 2.5 MHz

Maximum Ratings

- Operating Temperature: -55°C to +150°C
- Storage Temperature: -55°C to +150°C
- Maximum Thermal Resistance: 1.0℃/W junction to case

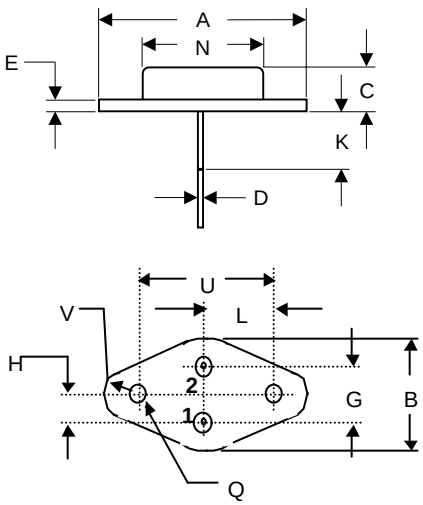
Characteristic	Symbol	Max	Unit
Collector-Emitter Voltage	V_{CEX}	400	Vdc
Collector-Base Voltage	V_{CB}	400	Vdc
Emitter-Base Voltage	V_{EB}	5.0	Vdc
Collector Current-Continuous	I_C	10	Adc
Base Current	I_B	2.0	Adc
Total Device Dissipation @T_C=25℃ Derate above 25℃	P_D	125 1.0	Watts W/℃

Figure 1 - Power Derating Curve



Power Dissipation (W) - *Versus* - Temperature °C

TO-3



PIN 1. BASE
PIN 2. EMITTER
CASE. COLLECTOR

DIMENSIONS					
	INCHES		MM		
DIM	MIN	MAX	MIN	MAX	NOTE
A	1.550	REF	39.37	REF	
B	-----	1.050	-----	26.67	
C	.250	.335	6.35	8.51	
D	.038	.043	0.97	1.09	
E	0.55	0.70	1.40	1.77	
G	.430	BSC	10.92	BSC	
H	.215	BSC	5.46	BSC	
K	.440	.480	11.18	12.19	
L	.665	BSC	16.89	BSC	
N	-----	.830	-----	21.08	
Q	.151	.165	3.84	4.19	∅
U	1.187	BSC	30.15	BSC	
V	.131	.188	3.33	4.77	

Electrical Characteristics @ 25 °C Unless Otherwise Specified

Characteristic		Symbol	Min	Max	Unit
OFF CHARACTERISTICS					
Collector-Emitter Sustaining Voltage[1] (I_C=100mA, I_B=0)		$V_{CEO(sus)}$	325	---	Vdc
Collector Cutoff Current		I_{CEX}			mAdc
(V_{CE}=400V, $V_{EB(off)}$=1.5V)	MJ413 MJ423			0.25	
	MJ431			2.5	
(V_{CE}=400V, $V_{EB(off)}$=1.5V, T_C=125℃)	MJ413 MJ423			0.5	
	MJ431			5.0	
Emitter Cutoff Current		I_{EBO}			mAdc
(V_{BE}=5.0Vdc, I_C=0)	MJ413 MJ423			5.0	
	MJ431			2.0	
ON CHARACTERISTICS					
DC Current Gain		h_{FE}			
(I_C=0.5A, V_{CE}=5.0V)	MJ413		20	80	
(I_C=1.0A, V_{CE}=5.0V)			15		
(I_C=1.0A, V_{CE}=5.0V)	MJ423		30	90	
(I_C=2.5A, V_{CE}=5.0V)			10		
(I_C=2.5A, V_{CE}=5.0V)	MJ431		15	35	
(I_C=3.0A, V_{CE}=5.0V)			10		
Collector-Emitter Saturation Voltage		$V_{CE(sat)}$			Vdc
(I_C=0.5A, I_B=0.05A)	MJ413			0.6	
(I_C=1.0A, I_B=0.1A)	MJ423			0.8	
(I_C=2.5A, I_B=0.5A)	MJ431			0.7	
Base-Emitter Saturation Voltage		$V_{BE(sat)}$			Vdc
(I_C=0.5A, I_B=0.05A)	MJ413			1.25	
(I_C=1.0A, I_B=0.1A)	MJ423			1.25	
(I_C=2.5A, I_B=0.5A)	MJ431			1.50	
DYNAMIC CHARACTERISTICS					
Current Gain – Bandwidth Product (I_C=200mA, V_{CE}=10V, f=1.0MHz)		f_T	2.5		MHz

(1) Pulse Test: Pulse Width ≦ 300 μs, Duty Cycle ≦ 2.0%

This datasheet has been download from:

www.datasheetcatalog.com

Datasheets for electronics components.