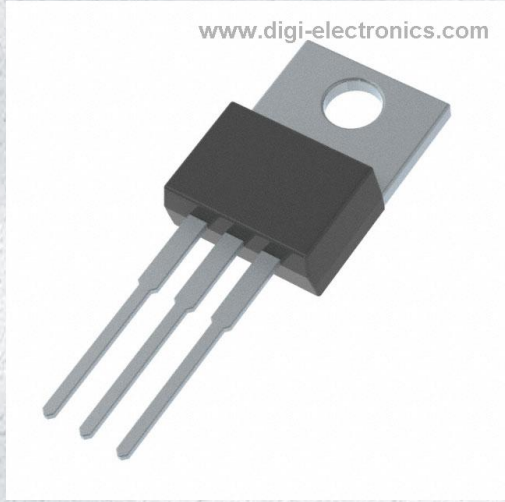
MJE13003-BP Datasheet



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DiGi Electronics Part Number	MJE13003-BP-DG
Manufacturer	Micro Commercial Co
Manufacturer Product Number	MJE13003-BP
Description	TRANS NPN 400V 1.5A TO220AB
Detailed Description	Bipolar (BJT) Transistor NPN 400 V 1.5 A 5MHz 1.5 W Through Hole TO-220AB

Tel: +00 852-30501935

RFQ Email: Info@DiGi-Electronics.com

Purchase and inquiry

Manufacturer Product Number:	Manufacturer:
MJE13003-BP	Micro Commercial Co
Series:	Product Status:
-	Obsolete
Transistor Type:	Current - Collector (Ic) (Max):
NPN	1.5 A
Voltage - Collector Emitter Breakdown (Max):	Vce Saturation (Max) @ Ib, Ic:
400 V	1V @ 250mA, 1A
Current - Collector Cutoff (Max):	DC Current Gain (hFE) (Min) @ Ic, Vce:
500µA	8 @ 500mA, 2V
Power - Max:	Frequency - Transition:
1.5 W	5MHz
Operating Temperature:	Mounting Type:
-55°C ~ 150°C (TJ)	Through Hole
Package / Case:	Supplier Device Package:
TO-220-3	TO-220AB
Base Product Number:	
MJE13003	

Environmental & Export classification

RoHS Status:	Moisture Sensitivity Level (MSL):
ROHS3 Compliant	1 (Unlimited)
ECCN:	HTSUS:
EAR99	8541.29.0095

Features

- Halogen Free Available Upon Request By Adding Suffix "-HF"
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant (Note1) ("P" Suffix Designates RoHS Compliant. See Ordering Information)

Maximum Ratings @ 25°C Unless Otherwise Specified

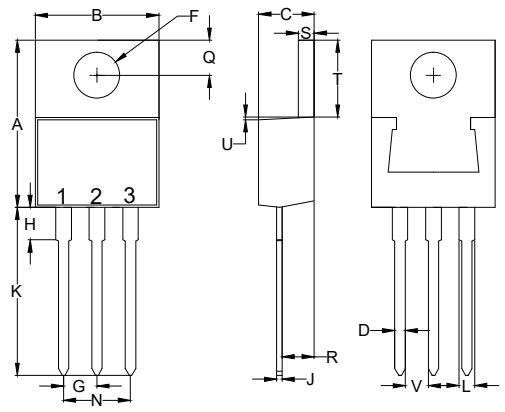
- Operating Junction Temperature Range: -55℃ to +150℃
- Storage Temperature Range: -55℃ to +150℃
- Thermal Resistance: 83.3℃/W Junction to Ambient

Parameter	Symbol	Rating	Unit
Collector-Base Voltage	V_{CBO}	700	V
Collector-Emitter Voltage	V_{CEO}	400	V
Emitter-Base Voltage	V_{EBO}	9	V
Continuous Collector Current	I_C	1.5	A
Power Dissipation	P_D	1.5	W

Note: 1.High Temperature Solder Exemption Applied, see EU Directive Annex 7.

NPN Silicon Plastic-Encapsulate Transistor

TO-220



1.BASE
2.COLLECTOR
3.EMITTER

DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.560	0.625	14.22	15.88	
B	0.380	0.420	9.65	10.67	
C	0.140	0.190	3.56	4.82	
D	0.020	0.045	0.51	1.14	
F	0.139	0.161	3.53	4.09	Φ
G	0.090	0.110	2.29	2.79	
H	-----	0.250	-----	6.35	
J	0.012	0.025	0.30	0.64	
K	0.500	0.580	12.70	14.73	
L	0.045	0.060	1.14	1.52	
N	0.190	0.210	4.83	5.33	
Q	0.100	0.135	2.54	3.43	
R	0.080	0.115	2.04	2.92	
S	0.045	0.055	1.14	1.39	
T	0.230	0.270	5.84	6.86	
U	-----	0.050	-----	1.27	
V	0.045	-----	1.15	-----	

Electrical Characteristics @ T_A=25°C Unless Otherwise Specified

Parameter	Symbol	Min	Typ	Max	Units	Conditions
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	700			V	I_C=1mA, I_E=0
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	400			V	I_C=10mA, I_B=0
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	9			V	I_E=1mA, I_C=0
Collector Cutoff Current	I_{CBO}			1	mA	V_{CB}=700V, I_E=0
Collector Cutoff Current	I_{CEO}			0.5	mA	V_{CE}=400V, I_B=0
Emitter Cutoff Current	I_{EBO}			1	mA	V_{EB}=9V, I_C=0
DC Current Gain	$h_{FE(1)}$	8		40		V_{CE}=5V, I_C=0.5A
	$h_{FE(2)}$	5				V_{CE}=5V, I_C=1.5A
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$			1.0	V	I_C=1000mA, I_B=250mA
Base-Emitter Saturation Voltage	$V_{BE(sat)}$			1.2	V	I_C=1000mA, I_B=250mA
Base-Emitter Voltage	V_{BE}			3.0	V	I_E=2000mA
Transition Frequency	f_T	5			MHz	V_{CE}=10V, I_C=0.1A, f=1MHz
Storage Time	t_s			2.5	µs	V_{CC}=100V, I_C=1A, I_{B1}=I_{B2}=0.2A
Fall Time	t_f			0.5	µs	

Curve Characteristics

Fig. 1 - Static Characteristics

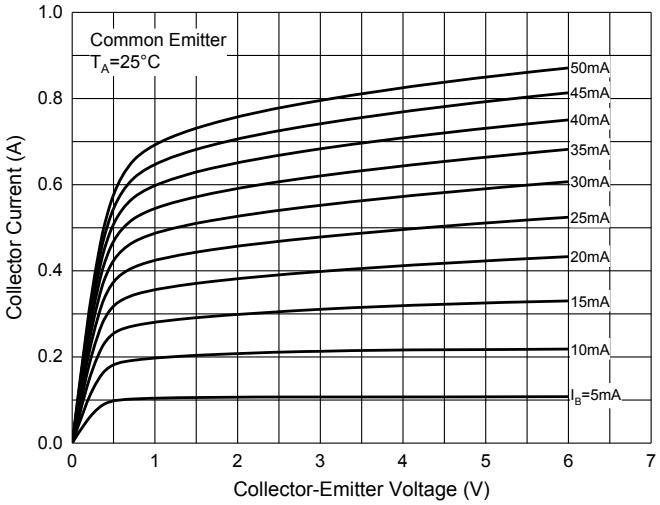


Fig. 2 - DC Current Gain Characteristics

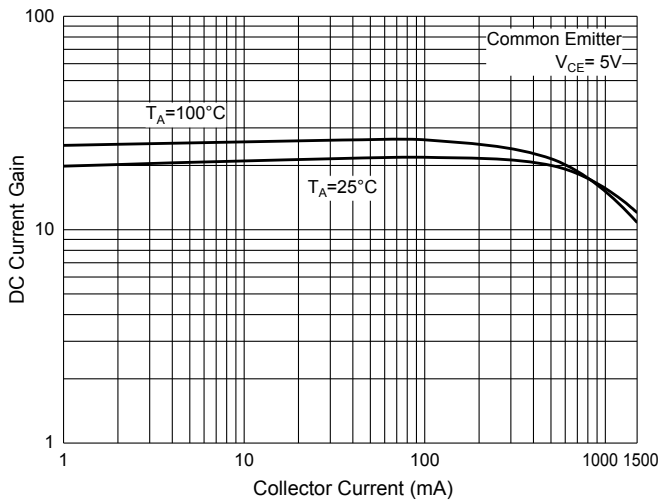


Fig. 3 - Base-Emitter Saturation Voltage Characteristics

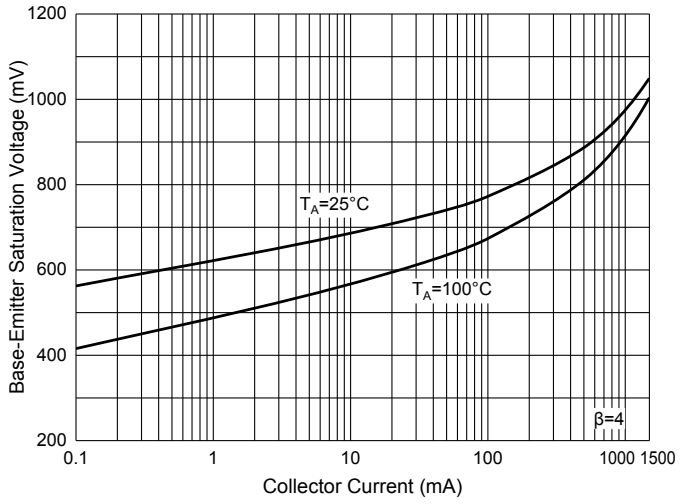


Fig. 4 - Collector-Emitter Saturation Voltage Characteristics

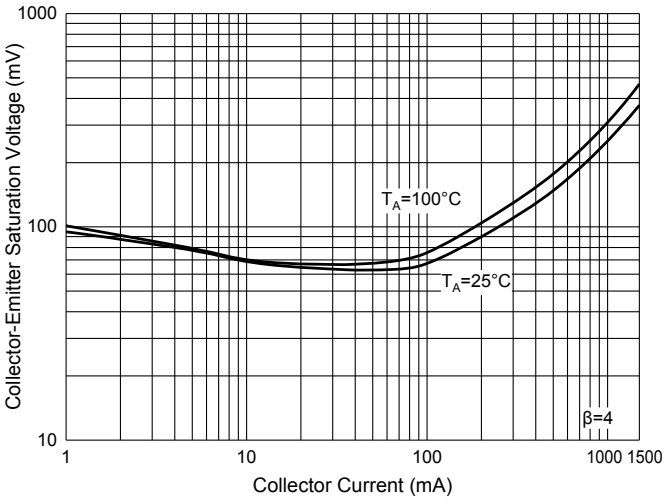


Fig. 5 - Base-Emitter Voltage Characteristics

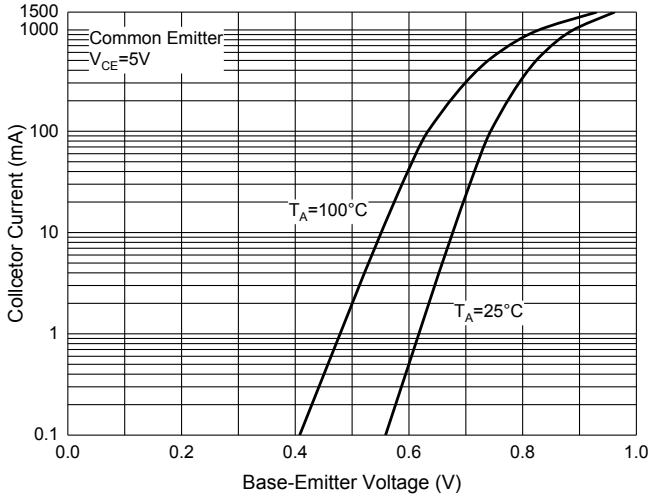
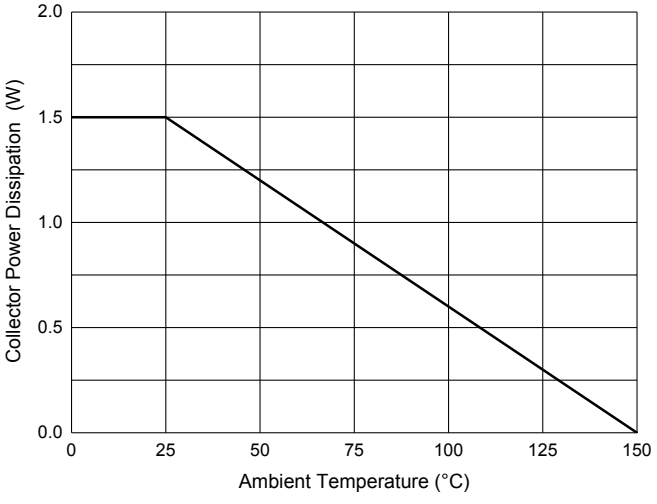


Fig. 6 - Collector Power Derating Curve



Ordering Information

Device	Packing
Part Number-BP	Bulk: 1Kpcs/Box

Note : Adding "-HF" Suffix for Halogen Free, eg. Part Number-BP-HF

OUR CERTIFICATE

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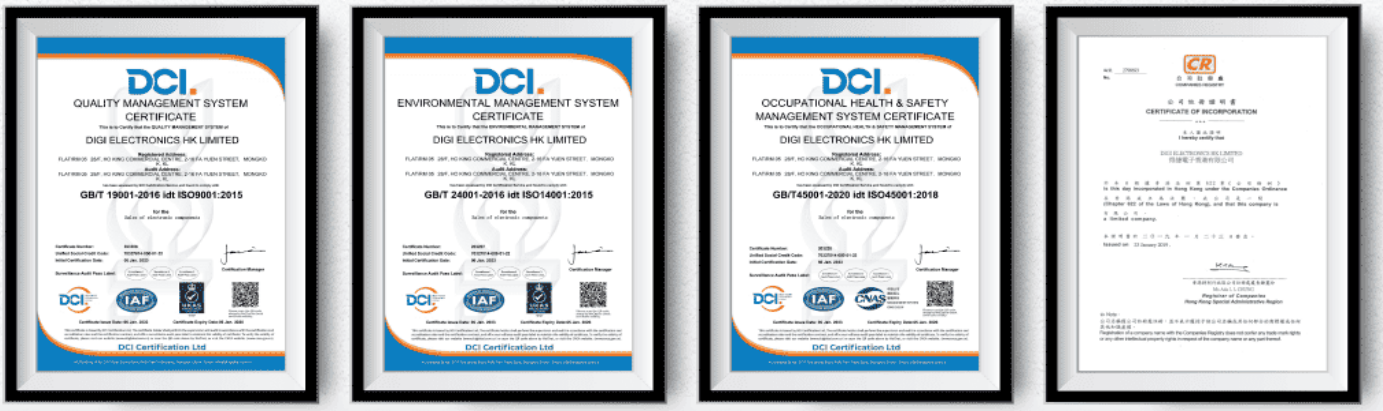

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RFQ Email: Info@DiGi-Electronics.com

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