



Micro Commercial Components



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MJE13005

NPN Silicon Plastic-Encapsulate Transistor

Features

- Lead Free Finish/RoHS Compliant(Note 1) ("P" Suffix designates RoHS Compliant. See ordering information)
- Capable of 1.5Watts of Power Dissipation.
- Collector-current 4.0A
- Collector-base Voltage 700V
- Operating and storage junction temperature range: -55°C to +150°C
- Marking: 3DD13005
- Epoxy meets UL 94 V-0 flammability rating
- Moisure Sensitivity Level 1

Electrical Characteristics @ 25°C Unless Otherwise Specified

Symbol	Parameter	Min	Max	Units
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OFF CHARACTERISTICS

$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage ($I_c=10\text{mAdc}$, $I_b=0$)	400		Vdc
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage ($I_c=1000\text{uAdc}$, $I_e=0$)	700		Vdc
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage ($I_e=1000\text{uAdc}$, $I_c=0$)	9.0		Vdc
I_{cBO}	Collector Cutoff Current ($V_{CB}=700\text{Vdc}$, $I_e=0$)		1000	uAdc
I_{cEO}	Collector Cutoff Current ($V_{CE}=400\text{Vdc}$, $I_b=0$)		100	uAdc
I_{eBO}	Emitter Cutoff Current ($V_{EB}=9.0\text{Vdc}$, $I_c=0$)		1000	uAdc

ON CHARACTERISTICS

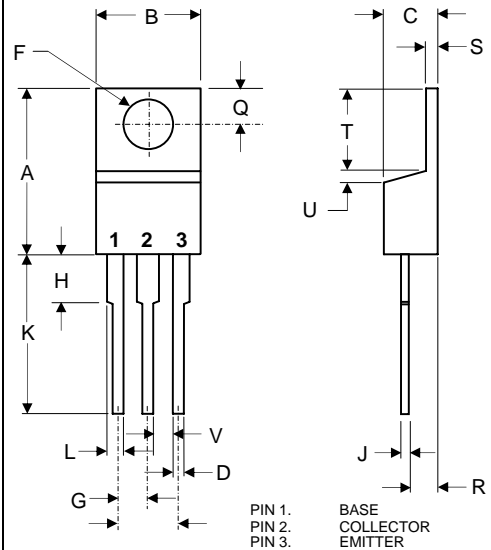
h_{FE}	DC Current Gain ($I_c=1000\text{mAdc}$, $V_{CE}=5.0\text{Vdc}$)	10	40	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage ($I_c=2000\text{mAdc}$, $I_b=500\text{mAdc}$)		0.6	Vdc
$V_{BE(sat)}$	Base-Emitter Saturation Voltage ($I_c=2000\text{mAdc}$, $I_b=500\text{mAdc}$)		1.6	Vdc

SMALL-SIGNAL CHARACTERISTICS

f_T	Transistor Frequency ($I_c=500\text{mAdc}$, $V_{CE}=10\text{Vdc}$, $f=1.0\text{MHz}$)	5.0		MHz
t_F	Fall Time $V_{CC}=120\text{V}$, $I_c=2.0\text{A}$		0.9	uS
t_S	Storage Time $I_{b1}=I_{b2}=0.4\text{A}$		4.0	uS

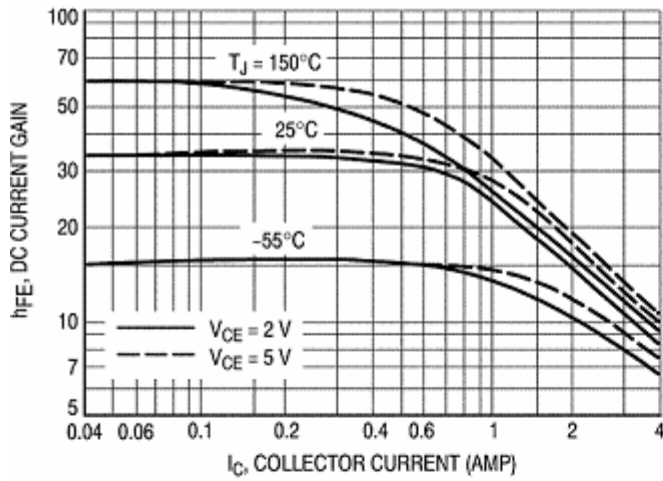
Notes:1.High Temperature Solder Exemption Applied, see EU Directive Annex 7.

TO-220

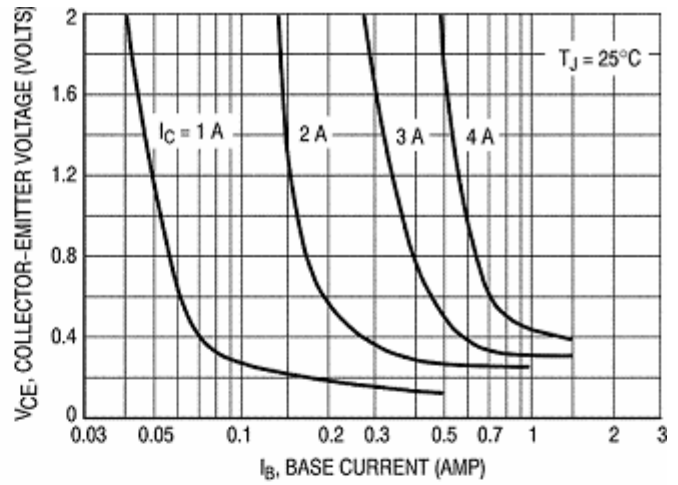


DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	.560	.625	14.22	15.88	
B	.380	.420	9.65	10.67	
C	.140	.190	3.56	4.82	
D	.020	.045	0.51	1.14	
F	.139	.161	3.53	4.09	∅
G	.190	.110	2.29	2.79	
H	---	.250	---	6.35	
J	.012	.025	0.30	0.64	
K	.500	.580	12.70	14.73	
L	.045	.060	1.14	1.52	
N	.190	.210	4.83	5.33	
Q	.100	.135	2.54	3.43	
R	.080	.115	2.04	2.92	
S	.045	.055	1.14	1.39	
T	.230	.270	5.84	6.86	
U	-----	.050	-----	1.27	
V	.045	-----	1.15	-----	

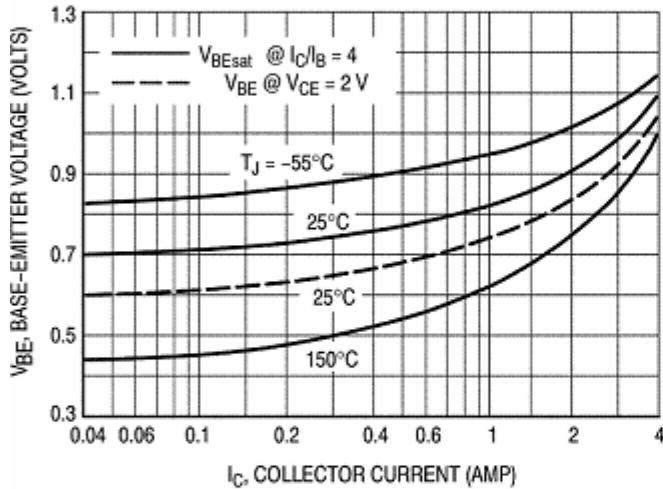
Typical Characteristics



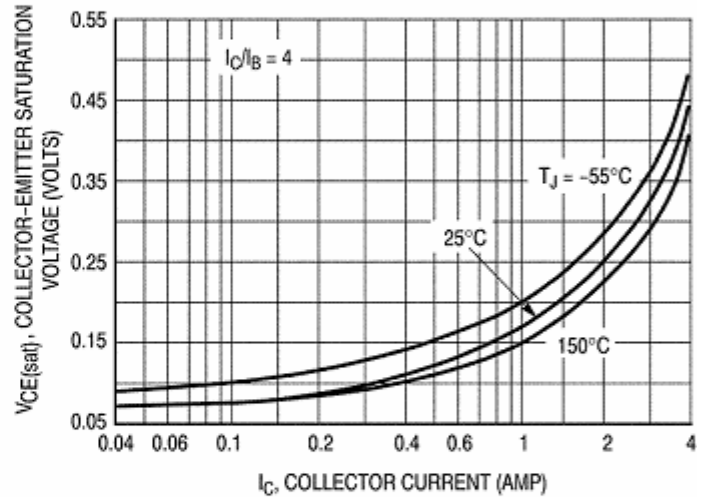
DC Current Gain



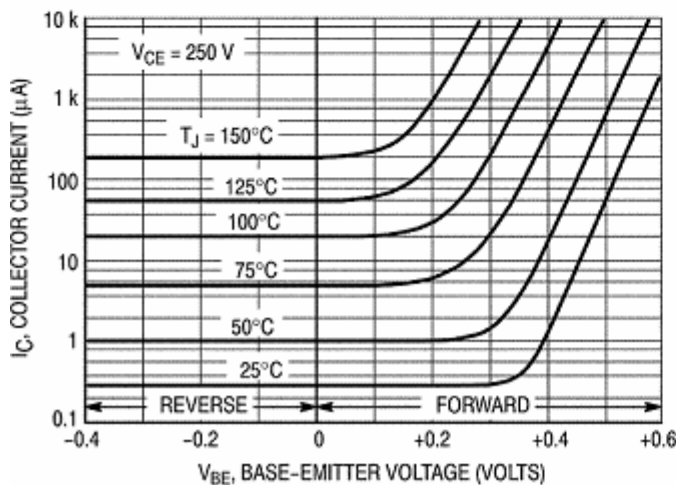
Collector Saturation Region



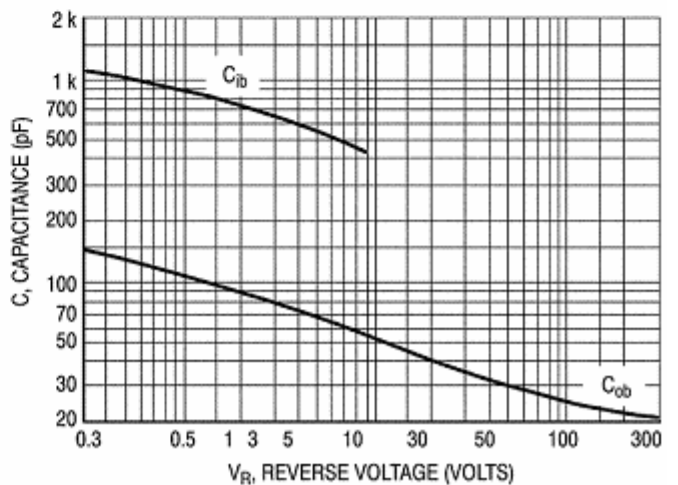
Base-Emitter Voltage



Collector-Emitter Saturation Voltage



Collector Cutoff Region



Capacitance



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Ordering Information :

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

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