MJE521G Datasheet

https://www.DiGi-Electronics.com

DiGi Electronics Part Number	MJE521G-DG
Manufacturer	onsemi
Manufacturer Product Number	MJE521G
Description	TRANS NPN 40V 4A TO126
Detailed Description	Bipolar (BJT) Transistor NPN 40 V 4 A 40 W Through Hole TO-126

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RFQ Email: Info@DiGi-Electronics.com

Purchase and inquiry

Manufacturer Product Number:	Manufacturer:
MJE521G	onsemi
Series:	Product Status:
-	Obsolete
Transistor Type:	Current - Collector (Ic) (Max):
NPN	4 A
Voltage - Collector Emitter Breakdown (Max):	Vce Saturation (Max) @ Ib, Ic:
40 V	-
Current - Collector Cutoff (Max):	DC Current Gain (hFE) (Min) @ Ic, Vce:
100µA (ICBO)	40 @ 1A, 1V
Power - Max:	Frequency - Transition:
40 W	-
Operating Temperature:	Mounting Type:
-65°C ~ 150°C (TJ)	Through Hole
Package / Case:	Supplier Device Package:
TO-225AA, TO-126-3	TO-126
Base Product Number:	
MJE521	

Environmental & Export classification

Moisture Sensitivity Level (MSL):	REACH Status:
1 (Unlimited)	REACH Unaffected
ECCN:	HTSUS:
EAR99	8541.29.0095

MJE521

Plastic Medium-Power NPN Silicon Transistor

These devices are designed for use in general−purpose amplifier and switching circuits. Recommended for use in 5 to 10 Watt audio amplifiers utilizing complementary symmetry circuitry.

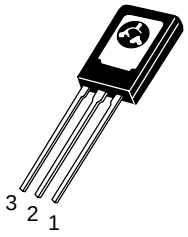
Features

- DC Current Gain − h_{FE} = 40 (Min) @ I_C = 1.0 Adc
- Complementary to PNP MJE371
- Pb−Free Package is Available*

ON Semiconductor®

http://onsemi.com

4 AMPERES
POWER TRANSISTORS
NPN SILICON
40 VOLTS, 40 WATTS



TO−225
CASE 77
STYLE 1

MAXIMUM RATINGS

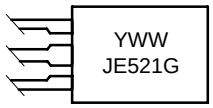
Rating	Symbol	Value	Unit
Collector−Emitter Voltage	V_{CEO}	40	Vdc
Collector−Base Voltage	V_{CB}	40	Vdc
Emitter Base Voltage	V_{EB}	4.0	Vdc
Collector Current − Continuous − Peak	I_C	4.0 8.0	Adc
Base Current − Continuous	I_B	2.0	Adc
Total Power Dissipation @ T_C = 25°C Derate above 25°C	P_D	40 0.32	W mW/°C
Operating and Storage Junction Temperature Range	T_J, T_{stg}	−65 to +150	°C

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction−to−Case	θ_{JC}	3.12	°C/W

Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur and reliability may be affected.

MARKING DIAGRAM



Y = Year
WW = Work Week
JE521 = Device Code
G = Pb−Free Package

ORDERING INFORMATION

Device	Package	Shipping
MJE521	TO−225	500 Units/Box
MJE521G	TO−225 (Pb−Free)	500 Units/Box

*For additional information on our Pb−Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

ELECTRICAL CHARACTERISTICS (T_C = 25°C unless otherwise noted)

Characteristic	Symbol	Min	Max	Unit
OFF CHARACTERISTICS				
Collector−Emitter Sustaining Voltage (Note 1) (I_C = 100 mAdc, I_B = 0)	$V_{CEO(sus)}$	40	−	Vdc
Collector−Base Cutoff Current (V_{CB} = 30 Vdc, I_E = 0)	I_{CBO}	−	100	μAdc
Emitter−Base Cutoff Current (V_{EB} = 4.0 Vdc, I_C = 0)	I_{EBO}	−	100	μAdc
ON CHARACTERISTICS				
DC Current Gain (Note 1) (I_C = 1.0 Adc, V_{CE} = 1.0 Vdc)	h_{FE}	40	−	−

1. Pulse Test: Pulse Width ≤ 300 μs, Duty Cycle ≤ 2.0%.

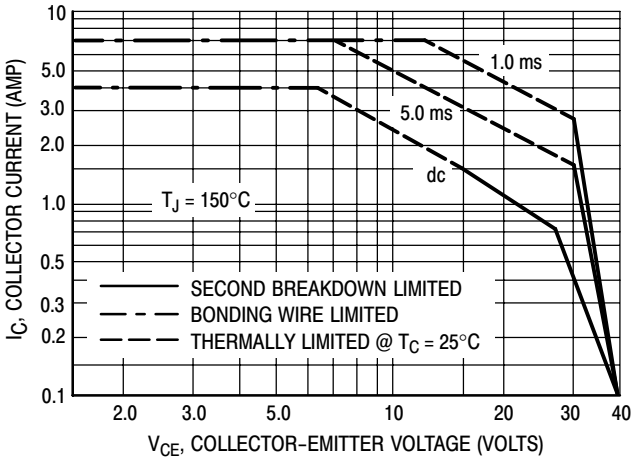


Figure 1. Active−Region Safe Operating Area

The data of Figure 1 based on $T_{J(pk)}$ = 150°C; T_C is variable depending on conditions. Second breakdown pulse limits are valid for duty cycles to 10% provided (T_{Jpk}) ≤ 150°C. At high case temperatures, thermal limitations will reduce the power that can be handled to values less than the limitations imposed by second breakdown.

There are two limitations on the power handling ability of a transistor: average junction temperature and second breakdown. Safe operating area curves indicate $I_C - V_{CE}$ limits of the transistor that must be observed for reliable operation; i.e., the transistor must not be subjected to greater dissipation than the curves indicate.

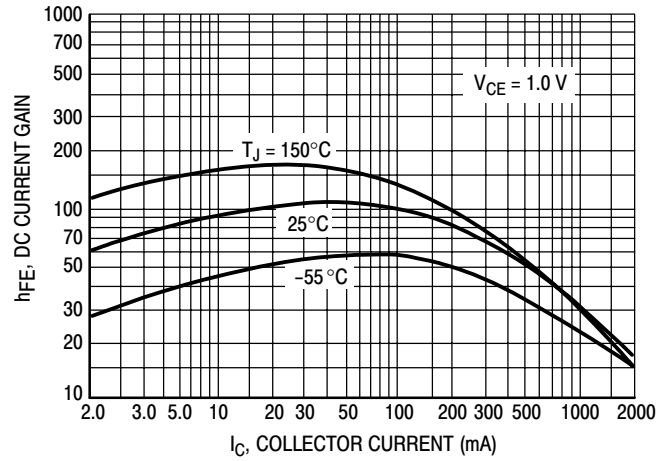


Figure 2. DC Current Gain

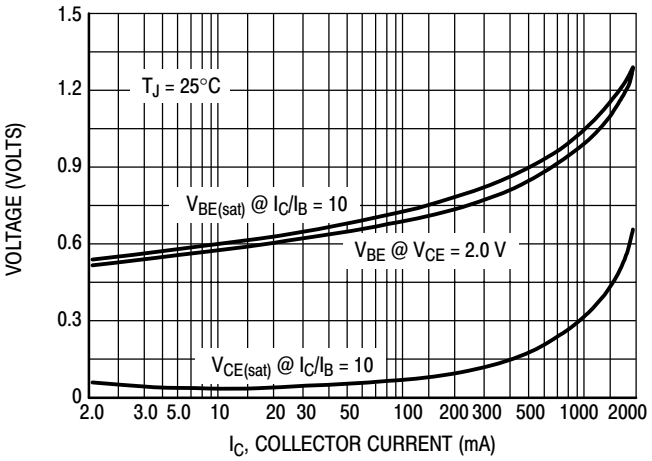


Figure 3. “On” Voltage

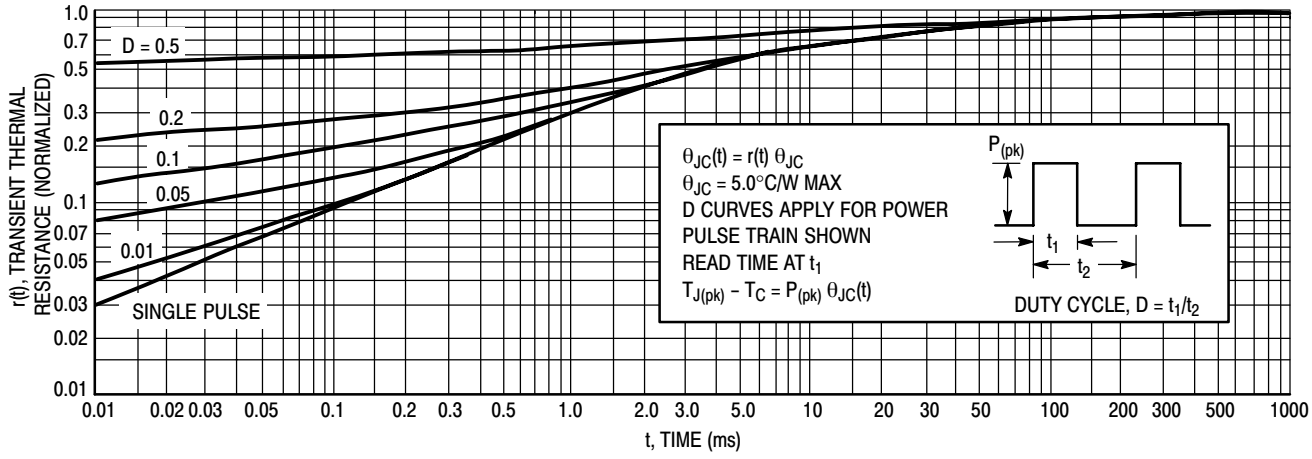
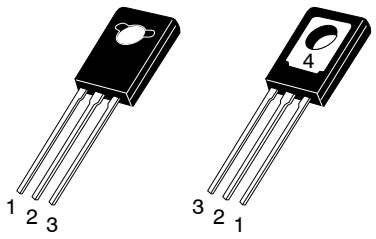


Figure 4. Thermal Response

MECHANICAL CASE OUTLINE
PACKAGE DIMENSIONS

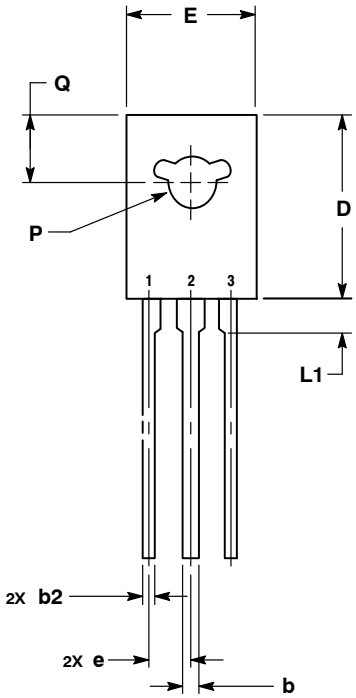
TO−225
CASE 77−09
ISSUE AD

DATE 25 MAR 2015

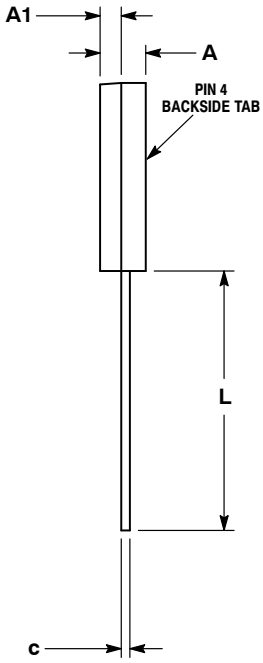


FRONT VIEW **BACK VIEW**

SCALE 1:1



FRONT VIEW

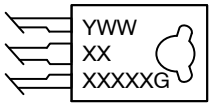


SIDE VIEW

NOTES:
1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. NUMBER AND SHAPE OF LUGS OPTIONAL.

	MILLIMETERS	
DIM	MIN	MAX
A	2.40	3.00
A1	1.00	1.50
b	0.60	0.90
b2	0.51	0.88
c	0.39	0.63
D	10.60	11.10
E	7.40	7.80
e	2.04	2.54
L	14.50	16.63
L1	1.27	2.54
P	2.90	3.30
Q	3.80	4.20

GENERIC MARKING DIAGRAM*



Y = Year
WW = Work Week
XXXXX = Device Code
G = Pb−Free Package

*This information is generic. Please refer to device data sheet for actual part marking. Pb−Free indicator, “G” or microdot “▪”, may or may not be present. Some products may not follow the Generic Marking.

STYLE 1:
PIN 1. EMITTER
2., 4. COLLECTOR
3. BASE

STYLE 2:
PIN 1. CATHODE
2., 4. ANODE
3. GATE

STYLE 3:
PIN 1. BASE
2., 4. COLLECTOR
3. EMITTER

STYLE 4:
PIN 1. ANODE 1
2., 4. ANODE 2
3. GATE

STYLE 5:
PIN 1. MT 1
2., 4. MT 2
3. GATE

STYLE 6:
PIN 1. CATHODE
2., 4. GATE
3. ANODE

STYLE 7:
PIN 1. MT 1
2., 4. GATE
3. MT 2

STYLE 8:
PIN 1. SOURCE
2., 4. GATE
3. DRAIN

STYLE 9:
PIN 1. GATE
2., 4. DRAIN
3. SOURCE

STYLE 10:
PIN 1. SOURCE
2., 4. DRAIN
3. GATE

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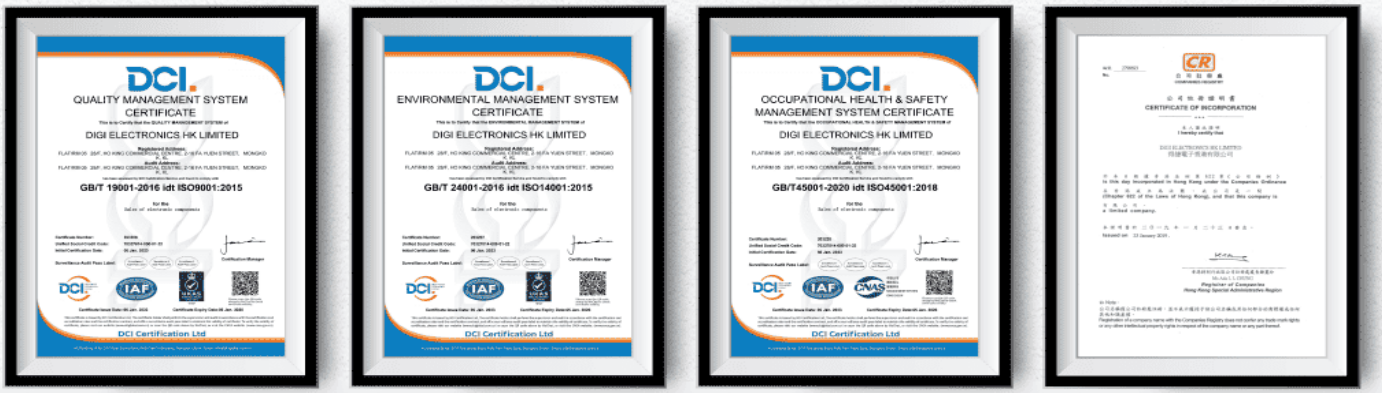

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