MMS9014-L-TP Datasheet

DiGi Electronics Part Number	MMS9014-L-TP-DG
Manufacturer	Micro Commercial Co
Manufacturer Product Number	MMS9014-L-TP
Description	TRANS NPN 45V 0.1A SOT23
Detailed Description	Bipolar (BJT) Transistor NPN 45 V 100 mA 150MHz 200 mW Surface Mount SOT-23

Tel: +00 852-30501935

RFQ Email: Info@DiGi-Electronics.com

Purchase and inquiry

Manufacturer Product Number:	Manufacturer:
MMS9014-L-TP	Micro Commercial Co
Series:	Product Status:
-	Active
Transistor Type:	Current - Collector (Ic) (Max):
NPN	100 mA
Voltage - Collector Emitter Breakdown (Max):	Vce Saturation (Max) @ Ib, Ic:
45 V	300mV @ 5mA, 100mA
Current - Collector Cutoff (Max):	DC Current Gain (hFE) (Min) @ Ic, Vce:
100nA	200 @ 1mA, 5V
Power - Max:	Frequency - Transition:
200 mW	150MHz
Operating Temperature:	Mounting Type:
-55°C ~ 150°C (TJ)	Surface Mount
Package / Case:	Supplier Device Package:
TO-236-3, SC-59, SOT-23-3	SOT-23
Base Product Number:	
MMS9014	

Environmental & Export classification

RoHS Status:	REACH Status:
ROHS3 Compliant	REACH Unaffected
ECCN:	HTSUS:
EAR99	8541.21.0075

Micro Commercial Components

MMS9014

NPN Silicon Plastic-Encapsulate Transistor

Features

- Halogen Free. “Green” Device (Note 1)
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

Maximum Ratings @ 25°C Unless Otherwise Specified

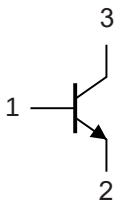
- Operating Junction Temperature Range: -55℃ to +150℃
- Storage Temperature Range: -55℃ to +150℃
- Thermal Resistance: 625℃/W Junction to Ambient

Parameter	Symbol	Rating	Unit
Collector-Base Voltage	V_{CBO}	50	V
Collector-Emitter Voltage	V_{CEO}	45	V
Emitter-Base Voltage	V_{EBO}	5	V
Continuous Collector Current	I_C	100	mA
Power Dissipation	P_D	200	mW

Note: 1. Halogen free "Green” products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

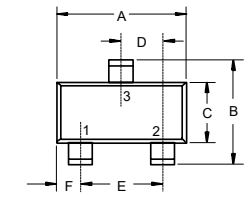
Marking: J6

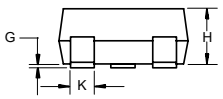
Internal Structure

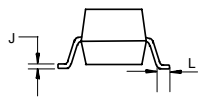


1.BASE
2.EMITTER
3.COLLECTOR

SOT-23

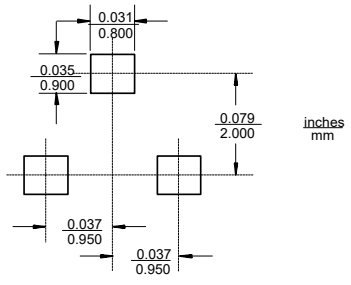






DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.110	0.120	2.80	3.04	
B	0.083	0.104	2.10	2.64	
C	0.047	0.055	1.20	1.40	
D	0.034	0.041	0.85	1.05	
E	0.067	0.083	1.70	2.10	
F	0.018	0.024	0.45	0.60	
G	0.0004	0.006	0.01	0.15	
H	0.035	0.043	0.90	1.10	
J	0.003	0.007	0.08	0.18	
K	0.012	0.020	0.30	0.51	
L	0.007	0.020	0.20	0.50	

Suggested Solder Pad Layout



Electrical Characteristics @ T_A=25°C Unless Otherwise Specified

Parameter	Symbol	Min	Typ	Max	Units	Conditions
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	50			V	I_C=100μA, I_E=0
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	45			V	I_C=100μA, I_B=0
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	5			V	I_E=100μA, I_C=0
Collector-Base Cutoff Current	I_{CBO}			0.1	μA	V_{CB}=50V, I_E=0
Collector Cutoff Current	I_{CEO}			0.1	μA	V_{CE}=35V, I_B=0
Emitter-Base Cutoff Current	I_{EBO}			0.1	μA	V_{EB}=3V, I_C=0
DC Current Gain	$h_{FE(1)}$	200		1000		V_{CE}=5V, I_C=1mA
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$			0.3	V	I_C=100mA, I_B=5mA
Base-Emitter Saturation Voltage	$V_{BE(sat)}$			1.0	V	I_C=100mA, I_B=5mA
Transition Frequency	f_T	150			MHz	V_{CE}=5V, I_C=10mA, f=30MHz

Classification of $h_{FE(1)}$

Rank	L	H
Range	200-450	450-1000

Curve Characteristics

Fig. 1 - Static Characteristics

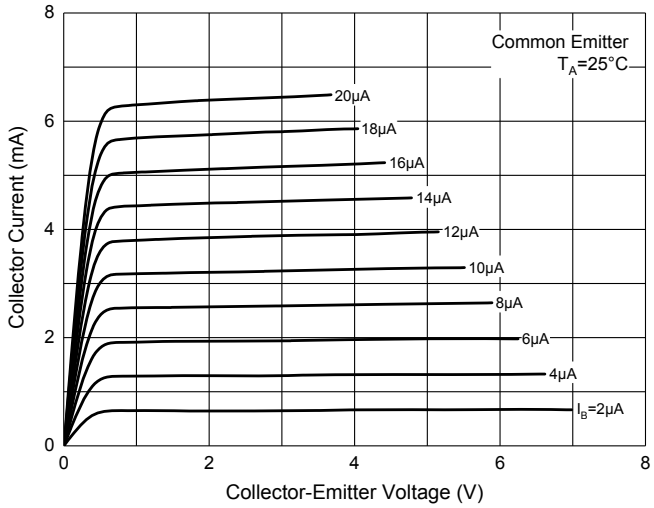


Fig. 2 - DC Current Gain Characteristics

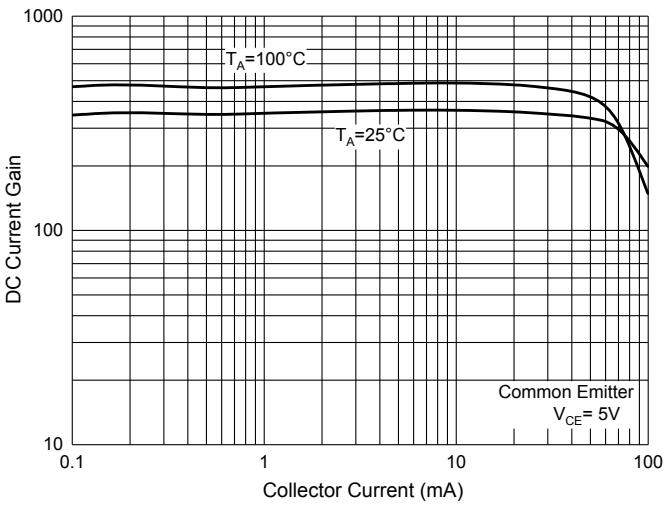


Fig. 3 - Collector-Emitter Saturation Voltage Characteristics

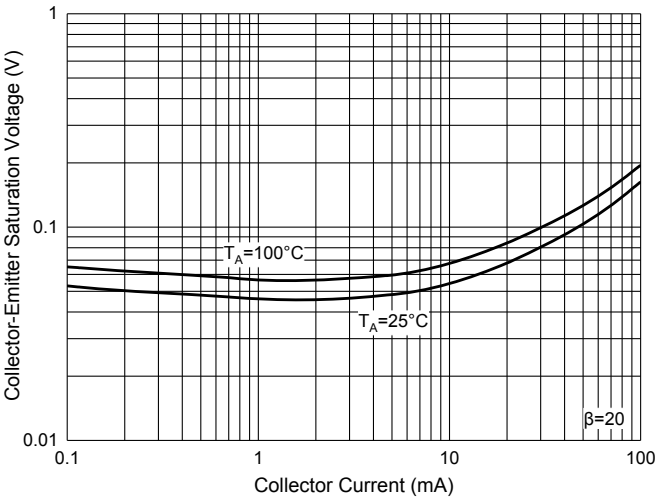


Fig. 4 - Base-Emitter Saturation Voltage Characteristics

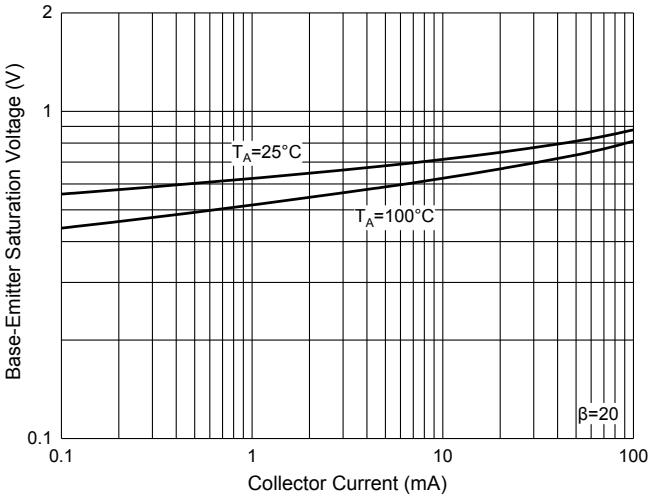


Fig. 5 - Base-Emitter Voltage Characteristics

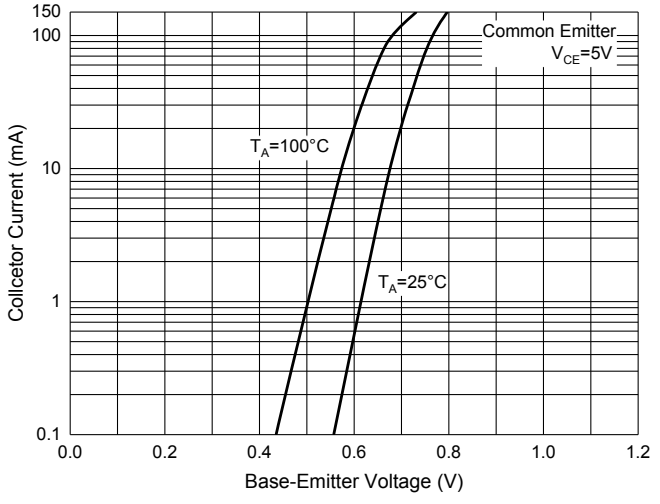
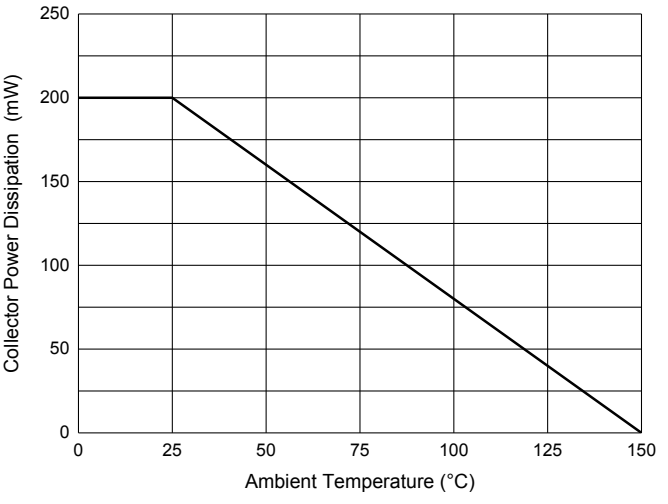


Fig. 6 - Collector Power Derating Curve



Ordering Information

Device	Packing
Part Number-TP	Tape&Reel: 3Kpcs/Reel

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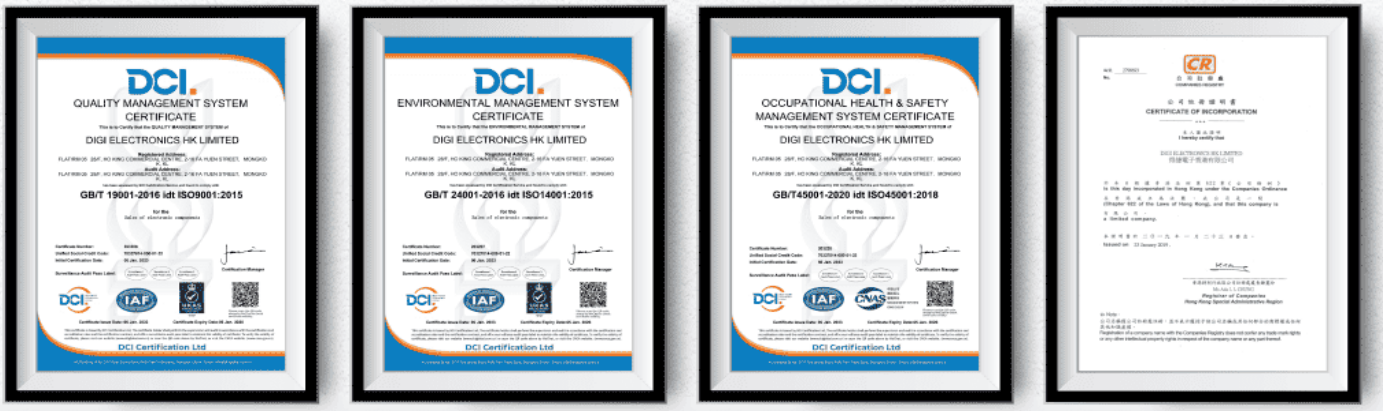

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