2SA1774T1G Datasheet

https://www.DiGi-Electronics.com

DiGi Electronics Part Number	2SA1774T1G-DG
Manufacturer	onsemi
Manufacturer Product Number	2SA1774T1G
Description	TRANS PNP 50V 0.1A SC75 SOT416
Detailed Description	Bipolar (BJT) Transistor PNP 50 V 100 mA 140MHz 150 mW Surface Mount SC-75, SOT-416

Tel: +00 852-30501935

RFQ Email: Info@DiGi-Electronics.com

Purchase and inquiry

Manufacturer Product Number:	Manufacturer:
2SA1774T1G	onsemi
Series:	Product Status:
-	Active
Transistor Type:	Current - Collector (Ic) (Max):
PNP	100 mA
Voltage - Collector Emitter Breakdown (Max):	Vce Saturation (Max) @ Ib, Ic:
50 V	500mV @ 5mA, 50mA
Current - Collector Cutoff (Max):	DC Current Gain (hFE) (Min) @ Ic, Vce:
500nA (ICBO)	120 @ 1mA, 6V
Power - Max:	Frequency - Transition:
150 mW	140MHz
Operating Temperature:	Mounting Type:
150°C (TJ)	Surface Mount
Package / Case:	Supplier Device Package:
SC-75, SOT-416	SC-75, SOT-416
Base Product Number:	
2SA1774	

Environmental & Export classification

RoHS Status:	Moisture Sensitivity Level (MSL):
ROHS3 Compliant	1 (Unlimited)
REACH Status:	ECCN:
REACH Unaffected	EAR99
HTSUS:	
8541.21.0075	

DATA SHEET
www.onsemi.com

PNP Silicon General Purpose Amplifier Transistor

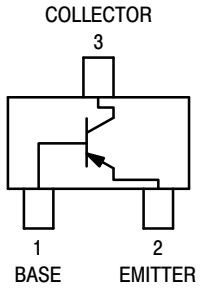
2SA1774G, S2SA1774G

SC−75/SOT−416
CASE 463
STYLE 1

This PNP transistor is designed for general purpose amplifier applications. This device is housed in the SC−75/SOT−416 package which is designed for low power surface mount applications, where board space is at a premium.

Features

- Reduces Board Space
- High h_{FE}, 210−460 (typical)
- Low $V_{CE(sat)}$, < 0.5 V
- Available in 8 mm, 7−inch/3000 Unit Tape and Reel
- S Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC−Q101 Qualified and PPAP Capable
- These Devices are Pb−Free, Halogen Free/BFR Free and are RoHS Compliant



MAXIMUM RATINGS (T_A = 25°C)

Rating	Symbol	Value	Unit
Collector − Emitter Voltage	$V_{(BR)CBO}$	−60	Vdc
Collector − Base Voltage	$V_{(BR)CEO}$	−50	Vdc
Emitter − Base Voltage	$V_{(BR)EBO}$	−6.0	Vdc
Collector Current − Continuous	I_C	−100	mAdc

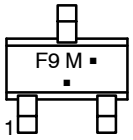
THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Power Dissipation (Note 1)	P_D	150	mW
Junction Temperature	T_J	150	°C
Storage Temperature Range	T_{stg}	−55 ~ +150	°C

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

1. Device mounted on a FR−4 glass epoxy printed circuit board using the minimum recommended footprint.

MARKING DIAGRAM



F9 = Device Code
M = Date Code*
▪ = Pb−Free Package

(Note: Microdot may be in either location)

*Date Code orientation may vary depending upon manufacturing location.

ORDERING INFORMATION

Device	Package	Shipping†
2SA1774G	SC−75 (Pb−Free)	3,000 / Tape & Reel
S2SA1774G	SC−75 (Pb−Free)	3,000 / Tape & Reel
2SA1774T1G	SC−75 (Pb−Free)	3,000 / Tape & Reel

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

2SA1774G, S2SA1774G

ELECTRICAL CHARACTERISTICS (T_A = 25°C)

Characteristic	Symbol	Min	Typ	Max	Unit
Collector−Base Breakdown Voltage (I_C = −50 μAdc, I_E = 0)	$V_{(BR)CBO}$	−60	–	–	V
Collector−Emitter Breakdown Voltage (I_C = −1.0 mAdc, I_B = 0)	$V_{(BR)CEO}$	−50	–	–	V
Emitter−Base Breakdown Voltage (I_E = −50 μAdc, I_E = 0)	$V_{(BR)EBO}$	−6.0	–	–	V
Collector−Base Cutoff Current (V_{CB} = −30 Vdc, I_E = 0)	I_{CBO}	–	–	−0.5	μA
Emitter−Base Cutoff Current (V_{EB} = −5.0 Vdc, I_B = 0)	I_{EBO}	–	–	−0.5	μA
Collector−Emitter Saturation Voltage (Note 2) (I_C = −50 mAdc, I_B = −5.0 mAdc)	$V_{CE(sat)}$	–	–	−0.5	V
DC Current Gain (Note 2) (V_{CE} = −6.0 Vdc, I_C = −1.0 mAdc)	h_{FE}	120	–	560	–
Transition Frequency (V_{CE} = −12 Vdc, I_C = −2.0 mAdc, f = 30 MHz)	f_T	–	140	–	MHz
Output Capacitance (V_{CB} = −12 Vdc, I_E = 0 Adc, f = 1 MHz)	C_{OB}	–	3.5	–	pF

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

2. Pulse Test: Pulse Width ≤ 300 μs, D.C. ≤ 2%.

2SA1774G, S2SA1774G

TYPICAL ELECTRICAL CHARACTERISTICS

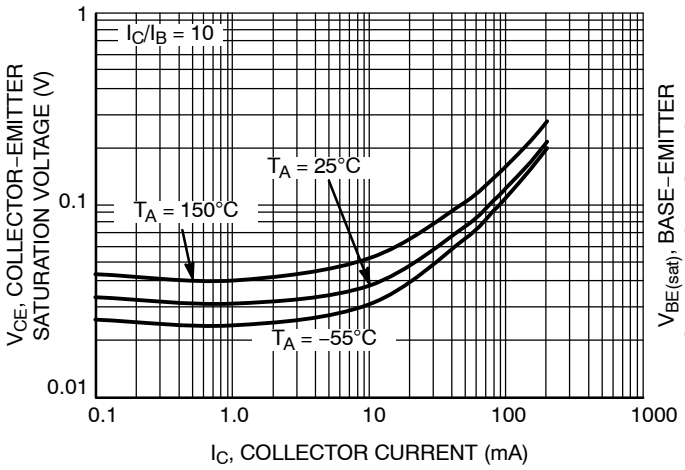


Figure 1. Collector−Emitter Saturation Voltage vs. Collector Current

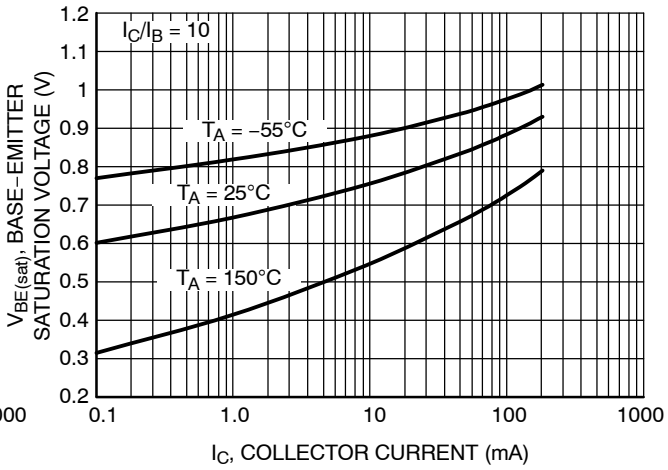


Figure 2. Base−Emitter Saturation Voltage vs. Collector Current

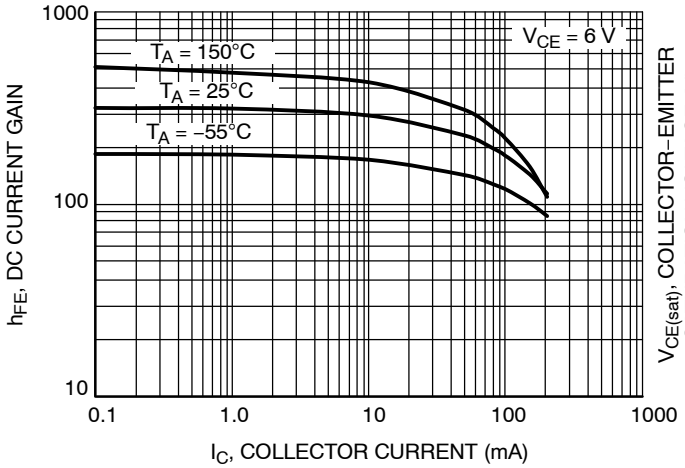


Figure 3. DC Current Gain vs. Collector Current

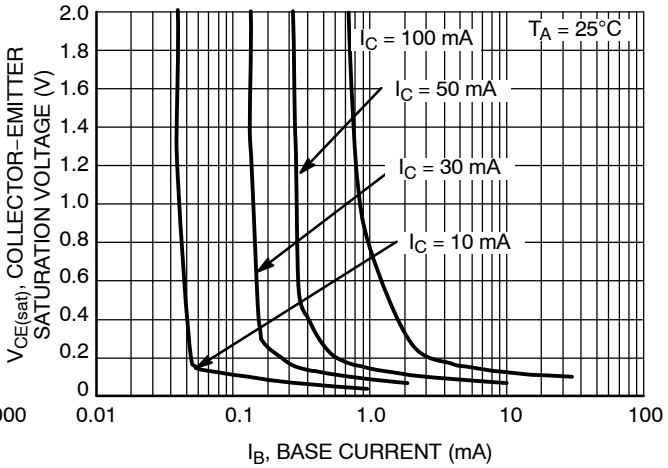


Figure 4. Saturation Region

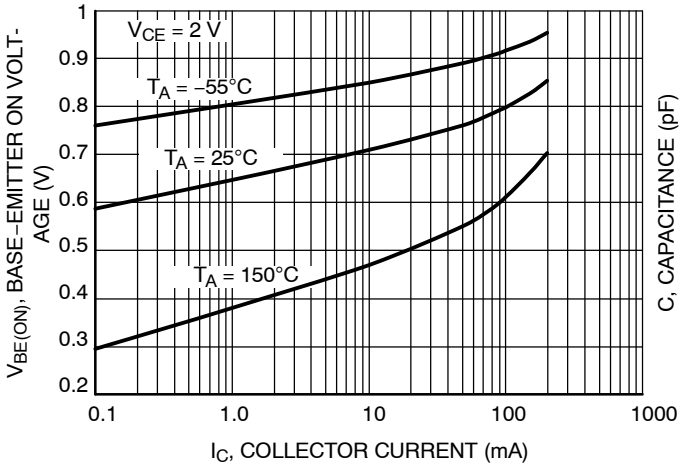


Figure 5. Base−Emitter Turn−ON Voltage vs. Collector Current

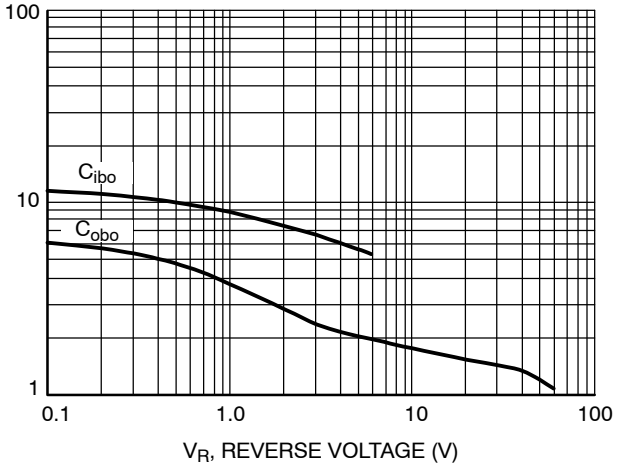


Figure 6. Capacitance

TYPICAL ELECTRICAL CHARACTERISTICS (Continued)

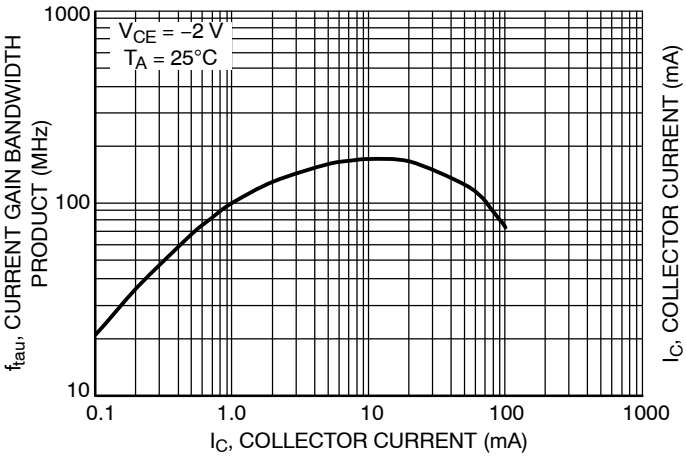


Figure 7. Current Gain Bandwidth Product vs. Collector Current

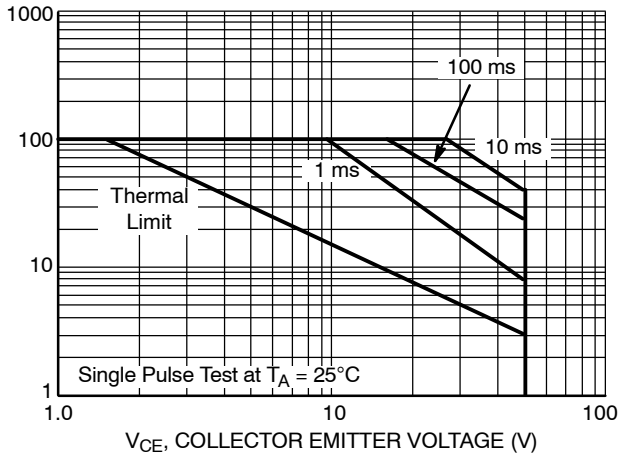
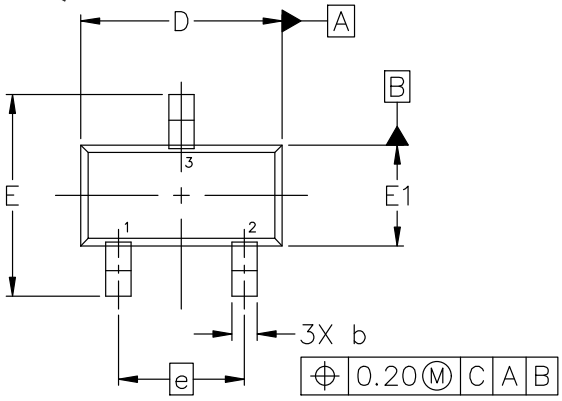


Figure 8. Safe Operating Area

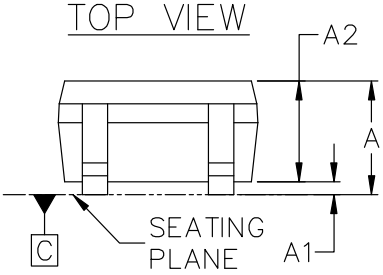
MECHANICAL CASE OUTLINE
PACKAGE DIMENSIONS

SC75−3 1.60x0.80x0.80, 1.00P
CASE 463
ISSUE H

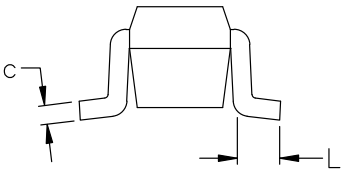
DATE 01 FEB 2024



TOP VIEW



SIDE VIEW



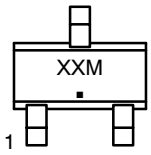
END VIEW

NOTES:

1. DIMENSIONING AND TOLERANCING CONFORM TO ASME Y14.5−2018.
2. ALL DIMENSION ARE IN MILLIMETERS.

DIM	MILLIMETERS		
	MIN.	NOM.	MAX.
A	0.70	0.80	0.90
A1	0.00	0.05	0.10
A2		0.80 REF.	
b	0.15	0.20	0.30
c	0.10	0.15	0.25
D	1.55	1.60	1.65
E	1.50	1.60	1.70
E1	0.70	0.80	0.90
e		1.00 BSC	
L	0.10	0.15	0.20

GENERIC
MARKING DIAGRAM*



XX = Specific Device Code
M = Date Code
▪ = 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.

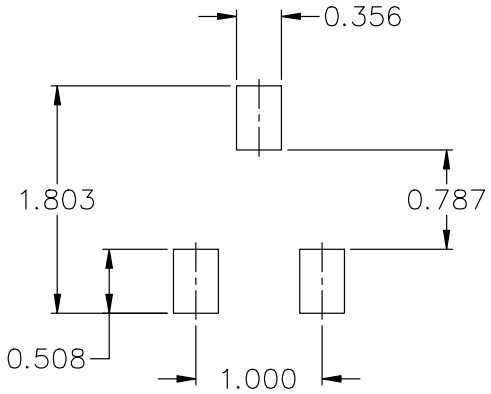
STYLE 1:
PIN 1. BASE
2. EMITTER
3. COLLECTOR

STYLE 2:
PIN 1. ANODE
2. N/C
3. CATHODE

STYLE 3:
PIN 1. ANODE
2. ANODE
3. CATHODE

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

STYLE 5:
PIN 1. GATE
2. SOURCE
3. DRAIN



RECOMMENDED MOUNTING FOOTPRINT*

* FOR ADDITIONAL INFORMATION ON OUR Pb−FREE STRATEGY AND SOLDERING DETAILS, PLEASE DOWNLOAD THE ON SEMICONDUCTOR SOLDERING AND MOUNTING TECHNIQUES REFERENCE MANUAL, SOLDERRM/D.

DOCUMENT NUMBER:	**98ASB15184C**	Electronic versions are uncontrolled except when accessed directly from the Document Repository. Printed versions are uncontrolled except when stamped “CONTROLLED COPY” in red.	
DESCRIPTION:	**SC75−3 1.60x0.80x0.80, 1.00P**		**PAGE 1 OF 1**

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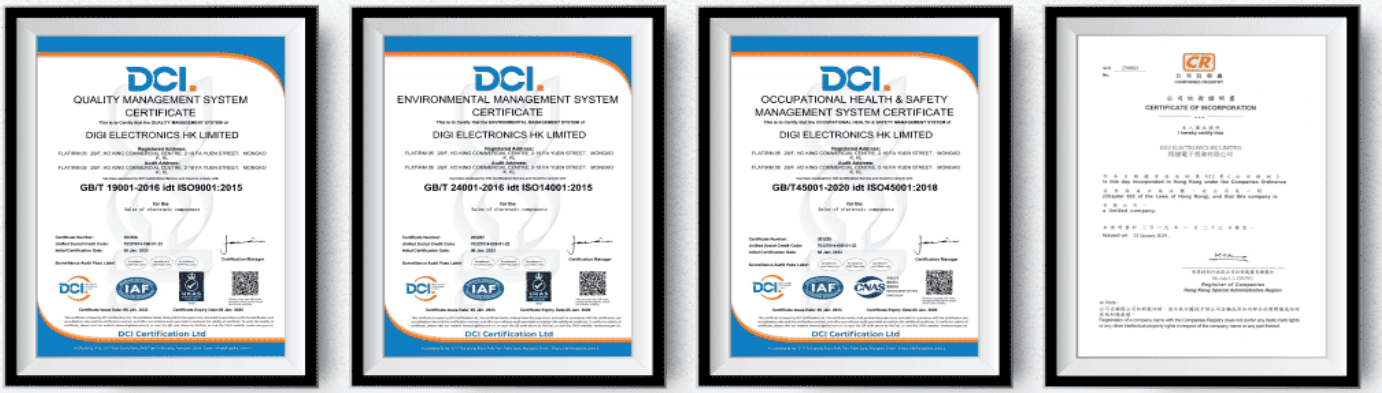

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