PNP SMALL SIGNAL SURFACE MOUNT TRANSISTOR

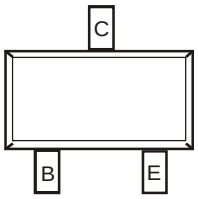
Features

- Epitaxial Planar Die Construction
- Complementary NPN Type Available (2DC4617Q,R,S)
- **Lead Free/RoHS Compliant (Note 1)**
- **"Green" Device (Notes 2 & 3)**

Mechanical Data

- Case: SOT-523
- Case Material: Molded Plastic, “Green” Molding Compound, Note 5. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminal Connections: See Diagram
- Lead Free Plating (Matte Tin annealed over Alloy 42 leadframe).
- Weight: 0.002 grams (approximate)

Top View



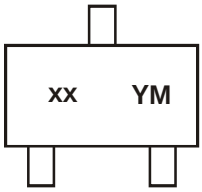
Pin-Out Configuration

Ordering Information (Note 4)

Part Number	Case	Packaging
2DA1774Q-7-F	SOT-523	3000/Tape & Reel
2DA1774R-7-F	SOT-523	3000/Tape & Reel
2DA1774S-7-F	SOT-523	3000/Tape & Reel

Notes:
2. No purposefully added lead.
2. Diodes Inc.'s "Green" policy can be found on our website at http://www.diodes.com.
3. Product manufactured with Date Code UO (week 40, 2007) and newer are built with Green Molding Compound. Product manufactured prior to Date Code UO are built with Non-Green Molding Compound and may contain Halogens or Sb2O3 Fire Retardants.
4. For packaging details, go to our website at http://www.diodes.com.

Marking Information



xx = Product Type Marking Code:
2DA1774Q = 8A
2DA1774R = 8B
2DA1774S = 8C
YM = Date Code Marking
Y = Year (ex: N = 2002)
M = Month (ex: 9 = September)

Date Code Key

Year	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Code	N	P	R	S	T	U	V	W	X	Y	Z	A	B	C

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	O	N	D

Maximum Ratings @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	-60	V
Collector-Emitter Voltage	V_{CEO}	-50	V
Emitter-Base Voltage	V_{EBO}	-6.0	V
Collector Current - Continuous (Note 5)	I_C	150	mA

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 5) T_A = 25°C	P_D	150	mW
Thermal Resistance, Junction to Ambient (Note 5)	$R_{\theta JA}$	833	°C/W
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +150	°C

Electrical Characteristics @T_A = 25°C unless otherwise specified

Characteristic		Symbol	Min	Max	Unit	Test Condition
OFF CHARACTERISTICS (Note 6)						
Collector-Base Breakdown Voltage		$V_{(BR)CBO}$	-60	—	V	I_C = -50μA, I_E = 0
Collector-Emitter Breakdown Voltage		$V_{(BR)CEO}$	-50	—	V	I_C = -1.0mA, I_B = 0
Emitter-Base Breakdown Voltage		$V_{(BR)EBO}$	-6.0	—	V	I_E = -50μA, I_C = 0
Collector Cutoff Current		I_{CBO}	—	-100	nA	V_{CB} = -60V
Emitter Cutoff Current		I_{EBO}	—	-100	nA	V_{EB} = -6.0V
ON CHARACTERISTICS (Note 6)						
DC Current Gain	2DA1774Q 2DA1774R 2DA1774S	h_{FE}	120 180 270	270 390 560	—	V_{CE} = -6.0V, I_C = -1.0mA
Collector-Emitter Saturation Voltage		$V_{CE(SAT)}$	—	-0.5	V	I_C = -50mA, I_B = -5.0mA
SMALL SIGNAL CHARACTERISTICS						
Output Capacitance		C_{obo}	4.0 Typ.	5.0	pF	V_{CB} = -12V, f = 1.0MHz, I_E = 0
Current Gain-Bandwidth Product		f_T	140 Typ.	—	MHz	V_{CE} = -12V, I_C = -2.0mA, f = 30MHz

Notes: 5. Part mounted on FR-4 board with recommended pad layout, which can be found on our website at http://www.diodes.com.
6. Short duration pulse test used to minimize self-heating effect.

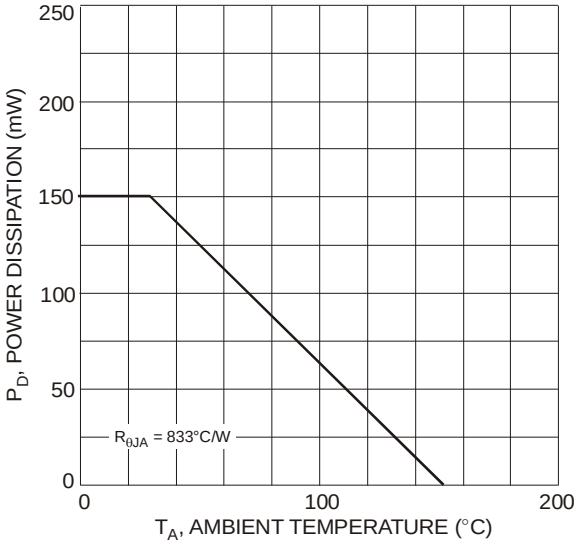


Fig. 1 Power Dissipation vs. Ambient Temperature (Note 1)

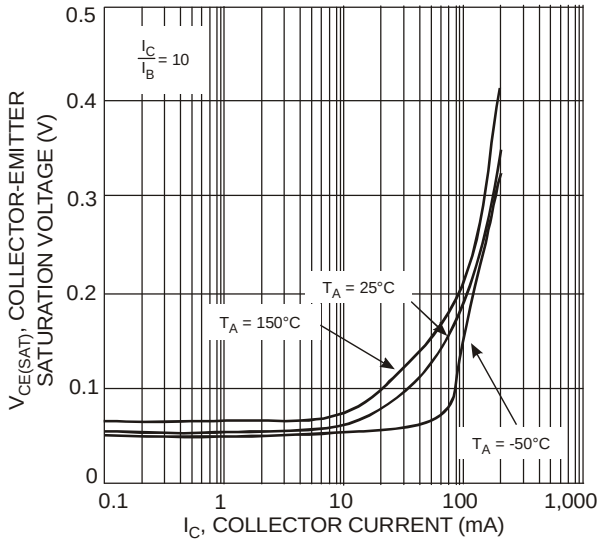


Fig. 2 Typical Collector-Emitter Saturation Voltage vs. Collector Current

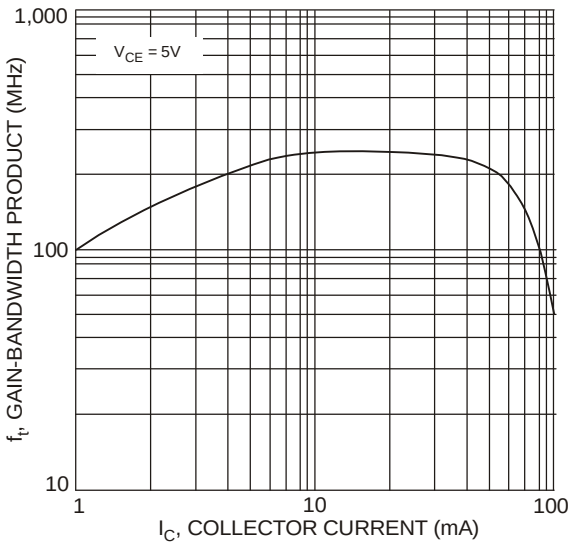
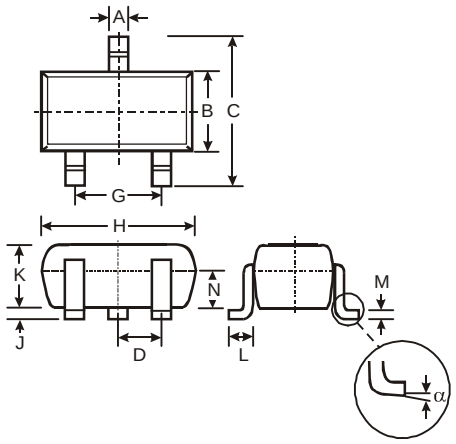


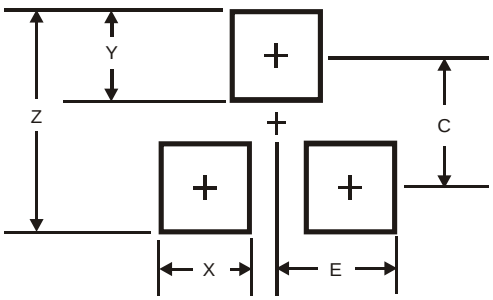
Fig. 3 Typical Gain-Bandwidth Product vs. Collector Current

Package Outline Dimensions



SOT-523			
Dim	**Min**	**Max**	**Typ**
A	0.15	0.30	0.22
B	0.75	0.85	0.80
C	1.45	1.75	1.60
D	—	—	0.50
G	0.90	1.10	1.00
H	1.50	1.70	1.60
J	0.00	0.10	0.05
K	0.60	0.80	0.75
L	0.10	0.30	0.22
M	0.10	0.20	0.12
N	0.45	0.65	0.50
α	0°	8°	—
All Dimensions in mm			

Suggested Pad Layout



Dimensions	Value (in mm)
Z	1.8
X	0.4
Y	0.51
C	1.3
E	0.7

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