

PNP PRE-BIASED SMALL SIGNAL DUAL SURFACE MOUNT TRANSISTOR

Features

- Epitaxial Planar Die Construction
- Built-In Biasing Resistors
- Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- Halogen and Antimony Free "Green" Device (Note 3)
- Qualified to AEC-Q101 Standards for High Reliability
- PPAP Capable (Note 4)

R1 (NOM)	R2 (NOM)
10kΩ	10kΩ

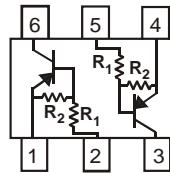
Mechanical Data

- Case: SOT363
- Case Material: Molded Plastic, "Green" Molding Compound
- UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish – Matte Tin Plated Leads, Solderable per MIL-STD-202, Method 208 (e3)
- Weight: 0.006 grams (Approximate)

SOT363



Top View



Device Schematic

Ordering Information (Notes 4 & 5)

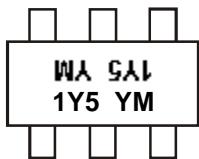
Product	Compliance	Marking	Reel size (inches)	Tape width (mm)	Quantity per reel
ADA114EUQ-7	Automotive	1Y5	7	8	3,000
ADA114EUQ-13	Automotive	1Y5	13	8	10,000

Notes:

- No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.
- See http://www.diodes.com/quality/lead_free.html for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
- Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
- Automotive products are AEC-Q101 qualified and are PPAP capable. Refer to http://www.diodes.com/quality/product_compliance_definitions/.
- For packaging details, go to our website at <http://www.diodes.com/products/packages.html>.

Marking Information

SOT363



1Y5 = Product Type Marking Code

YM = Date Code Marking

Y = Year (ex: D = 2016)

M = Month (ex: 9 = September)

Date Code Key

Year	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Code	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
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		

Absolute Maximum Ratings (@ $T_A = +25^\circ\text{C}$, unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Supply Voltage (1) to (6) and (4) to (3)	V_{CC}	-50	V
Input Voltage (1) to (2) and (4) to (5)	V_{IN}	+10 to -40	V
Output Current	I_O	-50	mA
Output Current	$I_C(\text{MAX})$	-100	mA

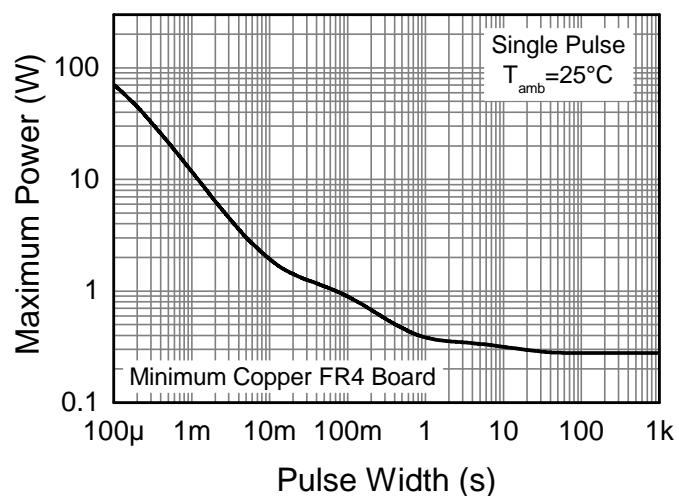
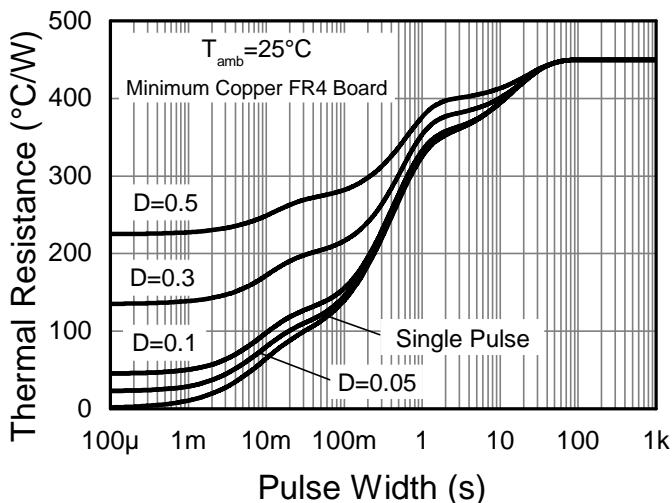
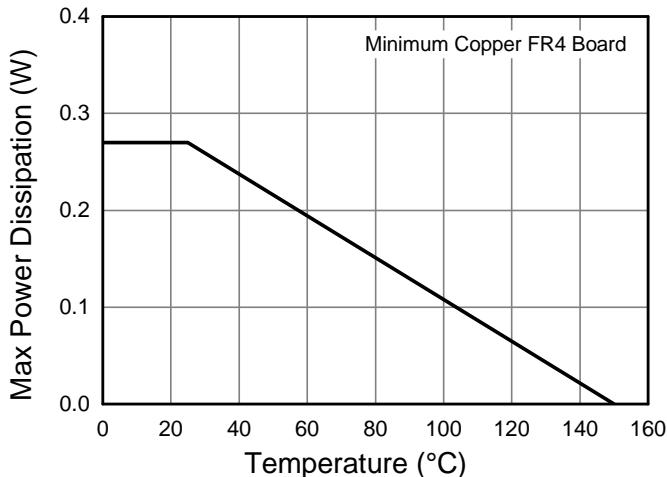
Thermal Characteristics (@ $T_A = +25^\circ\text{C}$, unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Power Dissipation (Notes 6 & 7)	P_D	270	mW
Thermal Resistance, Junction to Ambient Air (Note 6)	$R_{\theta JA}$	450	°C/W
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +150	°C

Notes:

- 6. Mounted on FR4 PC Board with minimum recommended pad layout.
- 7. 150mW per element must not be exceeded.

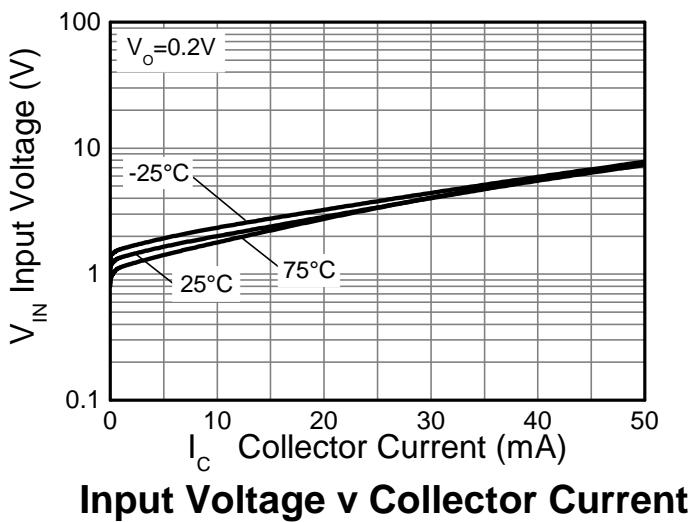
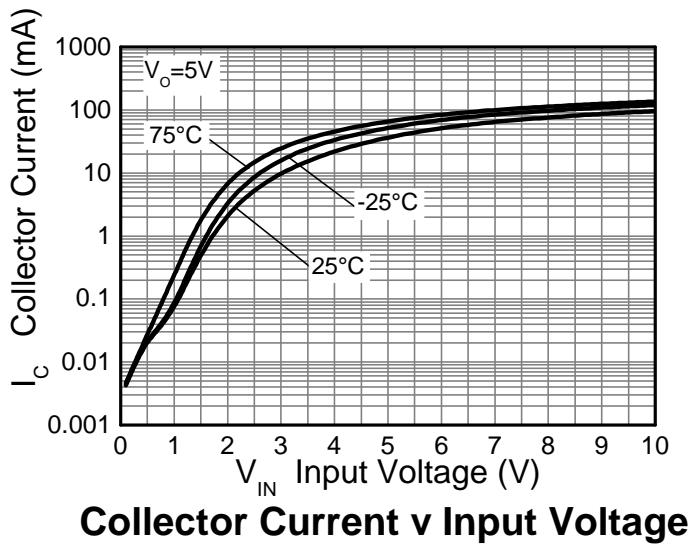
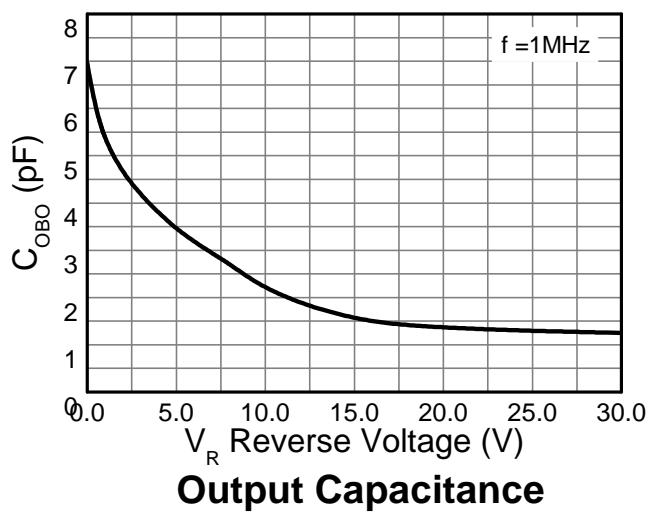
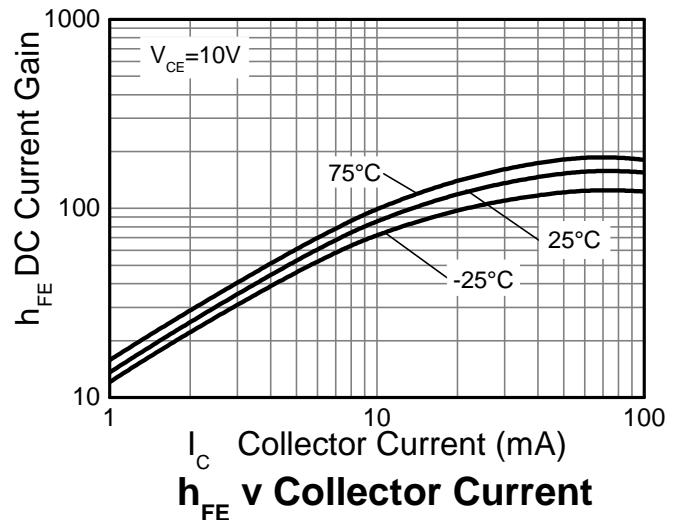
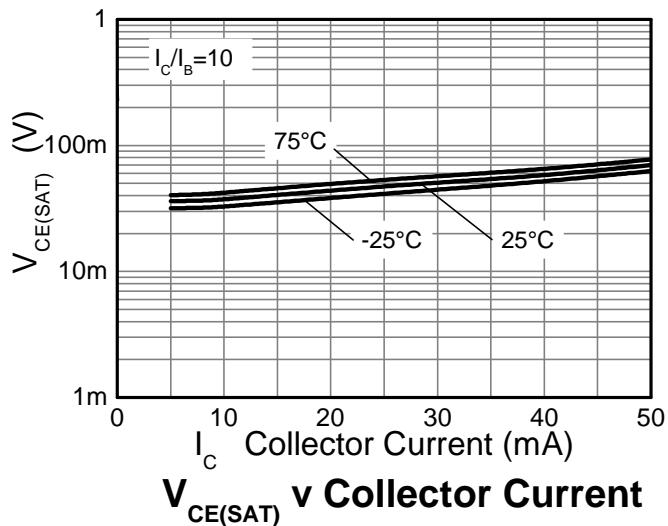
Thermal Characteristics and Derating Information



Electrical Characteristics (@ $T_A = +25^\circ\text{C}$, unless otherwise specified.)

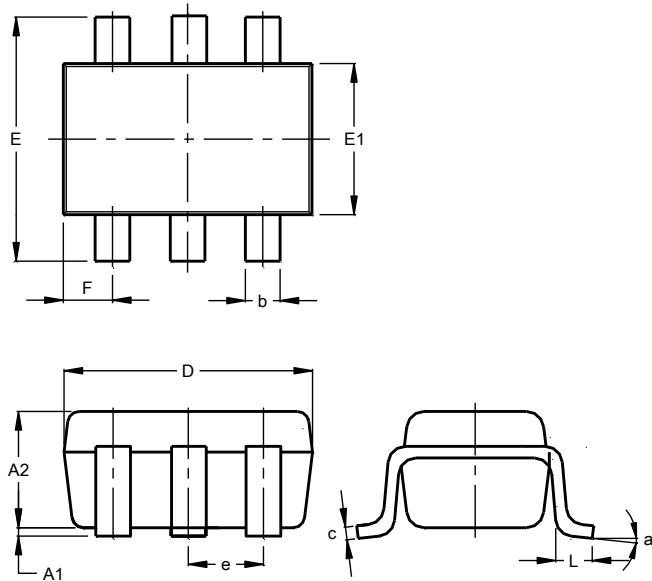
Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Input Voltage	$V_{I(\text{OFF})}$	-0.5	-1.1	—	V	$V_{CC} = -5\text{V}$, $I_O = -100\mu\text{A}$
	$V_{I(\text{ON})}$	—	-1.9	-3.0		$V_O = -0.3$, $I_O = -10\text{mA}$
Output Voltage	$V_{O(\text{ON})}$	—	-0.1	-0.3	V	$I_O/I_I = -10\text{mA} / -0.5\text{mA}$
Input Current	I_I	—	—	-0.88	mA	$V_I = -5\text{V}$
Output Current	$I_O(\text{OFF})$	—	—	-0.5	μA	$V_{CC} = -50\text{V}$, $V_I = 0\text{V}$
DC Current Gain	G_I	30	—	—	—	$V_O = -5\text{V}$, $I_O = -5\text{mA}$
Input Resistor (R_1) Tolerance	ΔR_1	-30	—	+30	%	—
Resistance Ratio Tolerance	R_2/R_1	-20	—	+20	%	—
Gain-Bandwidth Product	f_T	—	250	—	MHz	$V_{CE} = -10\text{V}$, $I_E = -5\text{mA}$, $f = 100\text{MHz}$

Typical Electrical Characteristics (@ $T_A = +25^\circ\text{C}$, unless otherwise specified.)



Package Outline Dimensions

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

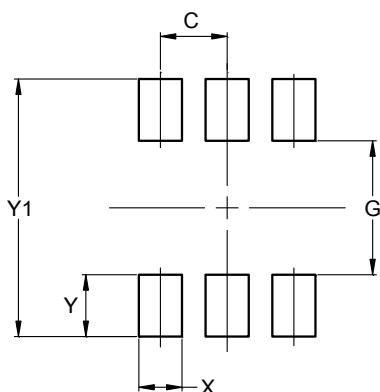


SOT363			
Dim	Min	Max	Typ
A1	0.00	0.10	0.05
A2	0.90	1.00	1.00
b	0.10	0.30	0.25
c	0.10	0.22	0.11
D	1.80	2.20	2.15
E	2.00	2.20	2.10
E1	1.15	1.35	1.30
e	0.650 BSC		
F	0.40	0.45	0.425
L	0.25	0.40	0.30
a	0°	8°	--

All Dimensions in mm

Suggested Pad Layout

Please see <http://www.diodes.com/package-outlines.html> for the latest version.



Dimensions	Value (in mm)
C	0.650
G	1.300
X	0.420
Y	0.600
Y1	2.500

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