



**DMMT2907A** 

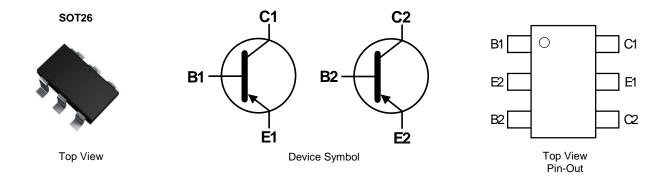
#### 60V DUAL PNP SMALL SIGNAL TRANSISTOR IN SOT26

#### Features

- BV<sub>CEO</sub> > -60V
- I<sub>CM</sub> = -1A Peak Pulse Current
- General Purpose PNP Transistors Ideally Suited for Low Power
  Amplification and Switching Applications
- Dual Transistors in a Single SOT26 Package, Taking Half of the Footprint of Two Equivalent Transistors in SOT23
- Epitaxial Planar Die Construction
- 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

#### **Mechanical Data**

- Case: SOT26
- 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 <sup>(1)</sup>
- Weight: 0.015 grams (Approximate)



### Ordering Information (Note 4)

Product	Compliance	Marking	Reel Size (inches)	Tape Width (mm)	Quantity per Reel
DMMT2907A-7	AEC-Q101	907	7	8	3,000

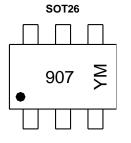
Notes: 1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.

2. 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.

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

4. For packaging details, go to our website at http://www.diodes.com/products/packages.html.

#### Marking Information



907 = Product Type Marking Code YM = Date Code Marking Y or  $\overline{Y}$  = Year (ex: C = 2015) M or  $\overline{M}$  = Month (ex: 9 = September)

Date Code Key

2410 0040													
Year	2015	2	016	2017	2018	2019	2020	202	1 20	22 2	2023	2024	2025
Code	С		D	E	F	G	Н			J	К	L	М
Mont	h	Jan	Feb	Mar	Apr	Мау	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	•	1	2	3	4	5	6	7	8	9	0	N	D



#### Absolute Maximum Ratings (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V <sub>CBO</sub>	-60	V
Collector-Emitter Voltage	V <sub>CEO</sub>	-60	V
Emitter-Base Voltage	V <sub>EBO</sub>	-5	V
Continuous Collector Current	Ic	-600	mA
Peak Pulsed Collector Current	I <sub>CM</sub>	-1	A

# Thermal Characteristics (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Characteristic		Symbol	Value	Unit	
Power Dissipation	(Notes 6 & 7)	6	1.28 10.3	W mW/°C	
Linear Derating Factor	(Notes 5 & 7)	PD	0.90 7.14		
Thermal Resistance, Junction to Ambient (Notes 5 a)		R <sub>θJA</sub>	97 140	°C/W	
Thermal Resistance, Junction to Lead (Note 8)		R <sub>θJL</sub>	113		
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 to +150	°C		

### ESD Ratings (Note 9)

Characteristic	Symbol	Value	Unit	JEDEC Class
Electrostatic Discharge – Human Body Model	ESD HBM	4,000	V	ЗA
Electrostatic Discharge – Machine Model	ESD MM	400	V	С

5. For a device surface mounted on 25mm x 1.6mm FR4 PCB with high coverage of single sided 1oz copper, in still air conditions; the device is Notes: measured when operating in a steady-state condition.

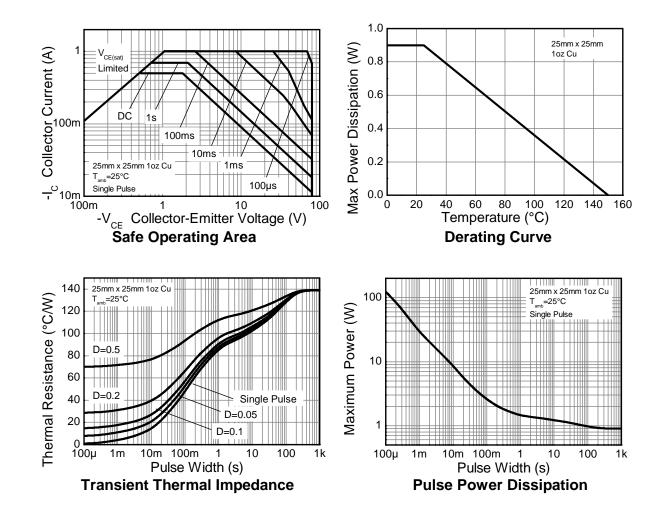
6. Same as Note 5, except the device is measured at t  $\leq$  5 seconds.

7. For a dual device with one active die.

Thermal resistance from junction to solder-point (at the end of the collector lead).
 Refer to JEDEC specification JESD22-A114 and JESD22-A115.



# **Thermal Characteristics and Derating Information**





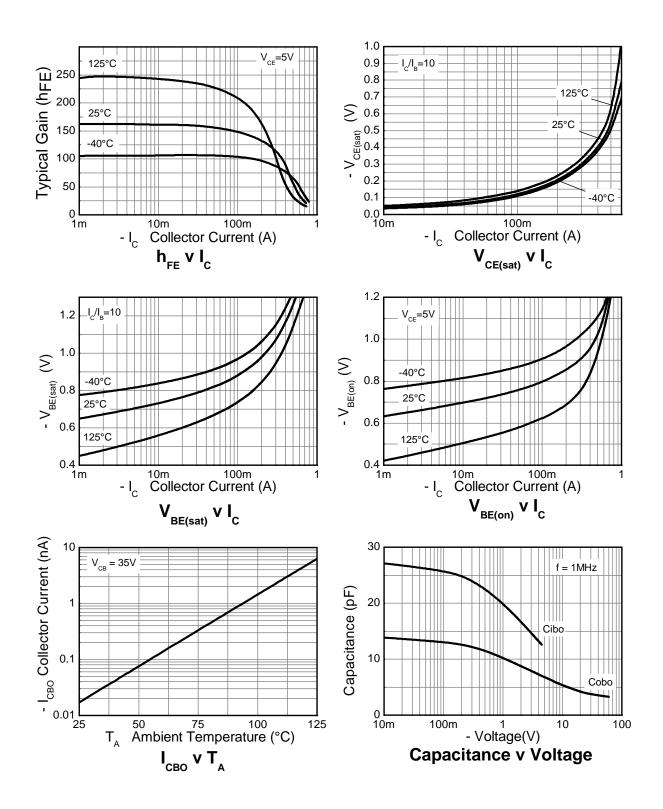
# Electrical Characteristics (@T<sub>A</sub> = +25°C unless otherwise specified.)

<b>•</b> •••••••			_			
Characteristic	Symbol	Min	Тур	Max	Unit	Test Condition
OFF CHARACTERISTICS	1		r			
Collector-Base Breakdown Voltage	BV <sub>CBO</sub>	-60	—	_	V	$I_{\rm C} = -10\mu A, I_{\rm E} = 0$
Collector-Emitter Breakdown Voltage (Note 10)	BVCEO	-60	—		V	$I_{\rm C} = -10 {\rm mA}, I_{\rm B} = 0$
Emitter-Base Breakdown Voltage	BV <sub>EBO</sub>	-5			V	$I_{E} = -10\mu A, I_{C} = 0$
Collector-Base Cut-Off Current	Ісво		—	-10	nA	$V_{CB} = -50V, I_E = 0$
	ICBO	—	—	-10	μA	$V_{CB} = -50V, I_E = 0, T_A = +150^{\circ}C$
Collector-Emitter Cut-Off Current	ICEV			±50	nA	$V_{CE} = -30V, V_{BE} = \pm 0.25V$
Base-Emitter Cut-Off Current	IBEV			±50	nA	$V_{CE} = -30V, V_{BE} = \pm 0.25V$
ON CHARACTERISTICS (Note 10)	-					
		75				$I_C = -100 \mu A$ , $V_{CE} = -10V$
		100	—			$I_{C} = -1.0 \text{mA}, V_{CE} = -10 \text{V}$
DC Current Gain	h <sub>FE</sub>	100			—	$I_{C} = -10mA$ , $V_{CE} = -10V$
		100	_	300		I <sub>C</sub> = -150mA, V <sub>CE</sub> = -10V
		50				$I_{C} = -500 \text{mA}, V_{CE} = -10 \text{V}$
Collector-Emitter Saturation Voltage				-0.4	V	$I_{C} = -150 \text{mA}, I_{B} = -15 \text{mA}$
	V <sub>CE(sat)</sub>			-1.6		$I_{C} = -500 \text{mA}, I_{B} = -50 \text{mA}$
Base-Emitter Saturation Voltage	N/	_		-1.3	V	I <sub>C</sub> = -150mA, I <sub>B</sub> = -15mA
base-Emilier Saturation voltage	V <sub>BE(sat)</sub>			-2.6	v	$I_{C} = -500 \text{mA}, I_{B} = -50 \text{mA}$
SMALL SIGNAL CHARACTERISTICS	-					
Output Capacitance	Cobo	—	5.2		pF	$V_{CB} = -10V$ , f = 1.0MHz, I <sub>E</sub> = 0mA
Input Capacitance	C <sub>ibo</sub>	—	16.3		pF	$V_{EB} = -2.0V$ , f = 1.0MHz, I <sub>C</sub> = 0mA
Current Gain-Bandwidth Product	f⊤	200	307		MHz	$V_{CE} = -2V$ , $I_C = -10mA$ , $f = 100MHz$
Turn-On Time	t <sub>on</sub>			21	ns	V 20V/1 150mA
Delay Time	t <sub>d</sub>			5.5	ns	V <sub>CC</sub> = -30V I <sub>C</sub> = -150mA, I <sub>B1</sub> = -15mA
Rise Time	tr	_		15.3	ns	B1 = -1200
Turn-Off Time	t <sub>off</sub>			200	ns	N/ CN/
Storage Time	ts			160	ns	V <sub>CC</sub> = -6V I <sub>C</sub> = -150mA, I <sub>B1</sub> = I <sub>B2</sub> = -15mA
Fall Time	tf			40	ns	IC = -13011A, IB1 = IB2 = -1311A

Note: 10. Measured under pulsed conditions. Pulse width  $\leq$  300  $\mu s.$  Duty cycle  $\leq$  2%.



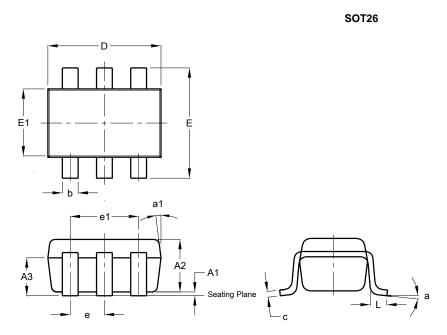
### Typical Electrical Characteristics (@T<sub>A</sub> = +25°C, unless otherwise specified.)





# **Package Outline Dimensions**

Please see AP02002 at http://www.diodes.com/datasheets/ap02002.pdf for the latest version.

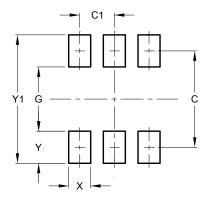


SOT26						
Dim	Min	Max	Тур			
A1	0.013	0.10	0.05			
A2	1.00	1.30	1.10			
A3	0.70	0.80	0.75			
b	0.35	0.50	0.38			
С	0.10	0.20	0.15			
D	2.90	3.10	3.00			
е	-	-	0.95			
e1	-	-	1.90			
Е	2.70	3.00	2.80			
E1	1.50	1.70	1.60			
L	0.35	0.55	0.40			
а	_	_	8°			
a1	_	_	7°			
All	Dimen	sions i	in mm			

### **Suggested Pad Layout**

Please see AP02001 at http://www.diodes.com/datasheets/ap02001.pdf for the latest version.

SOT26



Dimensions	Value (in mm)
С	2.40
C1	0.95
G	1.60
Х	0.55
Y	0.80
Y1	3.20



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