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## Product Summary

$V_{(BR)DSS}$	$R_{DS(ON)}$ max	$I_D$ max $T_A = +25^\circ\text{C}$
-30V	42m $\Omega$ @ $V_{GS} = -10\text{V}$	-5.1A
	65m $\Omega$ @ $V_{GS} = -4.5\text{V}$	-4.0A

## Features and Benefits

- Low On-Resistance
- Low Input Capacitance
- Fast Switching Speed
- ESD Protected Gate
- **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**

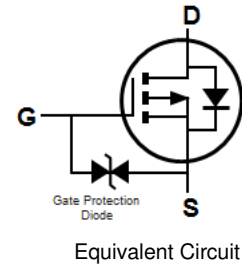
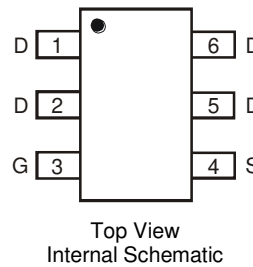
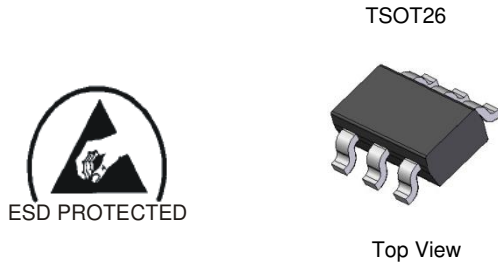
## Description and Applications

This MOSFET is designed to minimize the on-state resistance ( $R_{DS(ON)}$ ) and yet maintain superior switching performance, making it ideal for high efficiency power management applications.

- Backlighting
- Power Management Functions
- DC-DC Converters

## Mechanical Data

- Case: TSOT26
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminal Connections: See Diagram
- Terminals: Finish — Matte Tin Annealed over Copper Leadframe. Solderable per MIL-STD-202, Method 208 (E3)
- Weight: 0.015 grams (Approximate)



## Ordering Information (Note 4)

Part Number	Case	Packaging
DMP3065LVT-7	TSOT26	3,000/Tape & Reel
DMP3065LVT-13	TSOT26	10,000/Tape & Reel

- 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](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



65P = Product Type Marking Code  
 YM = Date Code Marking  
 Y or  $\bar{Y}$  = Year (ex: A = 2013)  
 M = Month (ex: 9 = September)

### Date Code Key

Year	2011	2012	2013	2014	2015	2016	2017	2018
Code	Y	Z	A	B	C	D	E	F

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 P-Channel** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Characteristic			Symbol	Value	Units
Drain-Source Voltage			V <sub>DSS</sub>	-30	V
Gate-Source Voltage			V <sub>GSS</sub>	±20	V
Continuous Drain Current (Note 5) V <sub>GS</sub> = -10V	Steady State	T <sub>A</sub> = +25°C	I <sub>D</sub>	-5.1	A
		T <sub>A</sub> = +70°C		-4.2	
Continuous Drain Current (Note 5) V <sub>GS</sub> = -4.5V	Steady State	T <sub>A</sub> = +25°C	I <sub>D</sub>	-4.0	A
		T <sub>A</sub> = +70°C		-3.2	
Maximum Body Diode Continuous Current			I <sub>S</sub>	-2.0	A

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

Characteristic		Symbol	Value	Units
Total Power Dissipation (Note 6)		P <sub>D</sub>	1.2	W
Thermal Resistance, Junction to Ambient (Note 6)	Steady State	R <sub>θJA</sub>	102	°C/W
Total Power Dissipation (Note 5)		P <sub>D</sub>	1.6	W
Thermal Resistance, Junction to Ambient (Note 5)	Steady State	R <sub>θJA</sub>	78	°C/W
Operating and Storage Temperature Range		T <sub>J</sub> , T <sub>STG</sub>	-55 to +150	°C

**Electrical Characteristics P-Channel** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
<b>OFF CHARACTERISTICS (Note 7)</b>						
Drain-Source Breakdown Voltage	BV <sub>DSS</sub>	-30	—	—	V	V <sub>GS</sub> = 0V, I <sub>D</sub> = -250μA
Zero Gate Voltage Drain Current @T <sub>J</sub> = +25°C	I <sub>DSS</sub>	—	—	-1	μA	V <sub>DS</sub> = -24V, V <sub>GS</sub> = 0V
Gate-Source Leakage	I <sub>GSS</sub>	—	—	±10	μA	V <sub>GS</sub> = ±20V, V <sub>DS</sub> = 0V
<b>ON CHARACTERISTICS (Note 7)</b>						
Gate Threshold Voltage	V <sub>GS(th)</sub>	-1	-1.7	-2.1	V	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = -250μA
Static Drain-Source On-Resistance	R <sub>DS(ON)</sub>	—	34	42	mΩ	V <sub>GS</sub> = -10V, I <sub>D</sub> = -4.9A
		—	52	65		V <sub>GS</sub> = -4.5V, I <sub>D</sub> = -3.7A
Forward Transfer Admittance	Y <sub>fs</sub>	—	8.5	—	S	V <sub>DS</sub> = -5V, I <sub>D</sub> = -4.9A
Diode Forward Voltage	V <sub>SD</sub>	—	-0.75	-1.2	V	V <sub>GS</sub> = 0V, I <sub>S</sub> = -1A
<b>DYNAMIC CHARACTERISTICS (Note 8)</b>						
Input Capacitance	C <sub>iss</sub>	—	587	880	pF	V <sub>DS</sub> = -15V, V <sub>GS</sub> = 0V, f = 1.0MHz
Output Capacitance	C <sub>oss</sub>	—	160	240		
Reverse Transfer Capacitance	C <sub>rss</sub>	—	84	130		
Total Gate Charge (V <sub>GS</sub> = -4.5V)	Q <sub>g</sub>	—	6.3	10	nC	V <sub>DS</sub> = -15V, I <sub>D</sub> = -4.9A
Total Gate Charge (V <sub>GS</sub> = -10V)	Q <sub>g</sub>	—	12.3	20		
Gate-Source Charge	Q <sub>gs</sub>	—	1.9	4		
Gate-Drain Charge	Q <sub>gd</sub>	—	2.5	5		
Turn-On Delay Time	t <sub>D(on)</sub>	—	5.7	10	ns	V <sub>DD</sub> = -15V, V <sub>GS</sub> = -10V, I <sub>D</sub> = -4.9A, R <sub>G</sub> = 6Ω
Turn-On Rise Time	t <sub>r</sub>	—	11.8	22		
Turn-Off Delay Time	t <sub>D(off)</sub>	—	21.8	35		
Turn-Off Fall Time	t <sub>f</sub>	—	23.9	40		

- Notes: 5. Device mounted on FR-4 substrate PC board, 2oz copper, with 1inch square copper plate.  
6. Device mounted on FR-4 substrate PC board, 2oz copper, with minimum recommended pad layout.  
7. Short duration pulse test used to minimize self-heating effect.  
8. Guaranteed by design. Not subject to product testing.



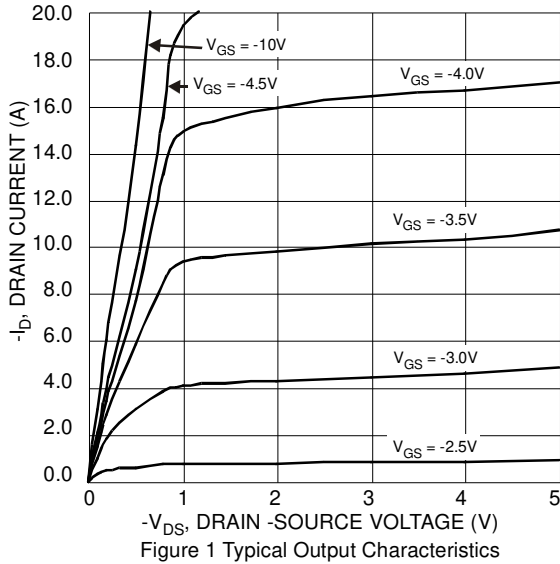


Figure 1 Typical Output Characteristics

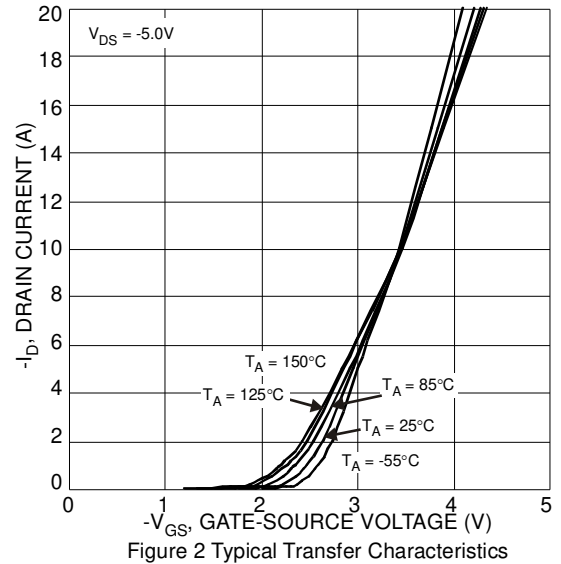


Figure 2 Typical Transfer Characteristics

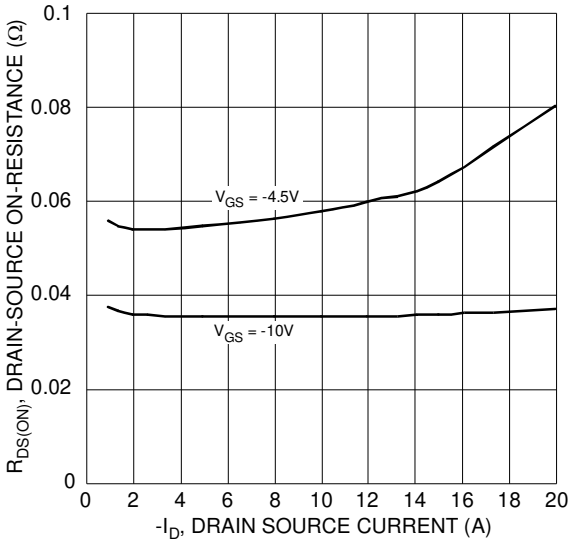


Figure 3 Typical On-Resistance vs. Drain Current and Gate Voltage

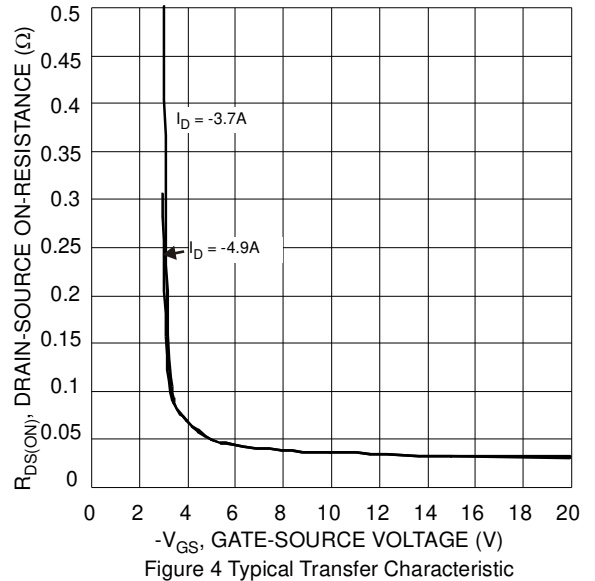


Figure 4 Typical Transfer Characteristic

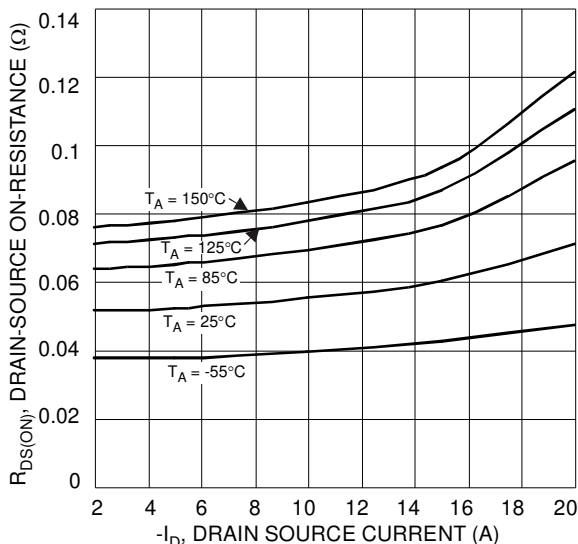


Figure 5 Typical On-Resistance vs. Drain Current and Temperature

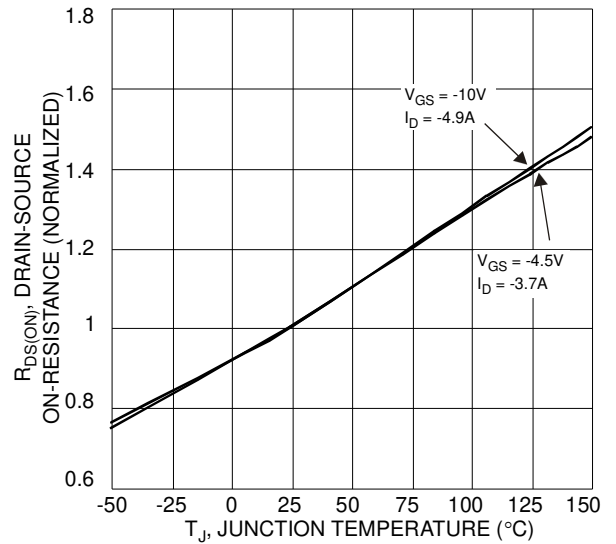


Figure 6 On-Resistance Variation with Temperature

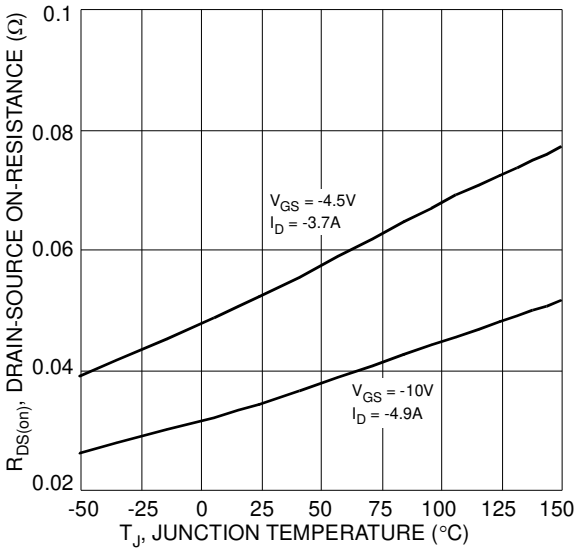


Figure 7 On-Resistance Variation with Temperature

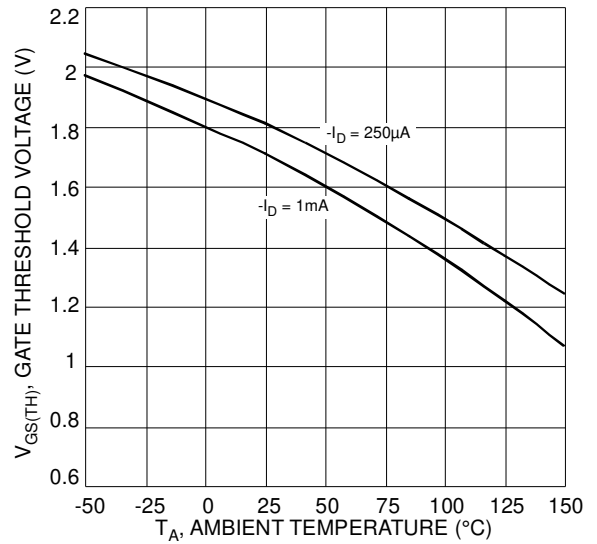


Figure 8 Gate Threshold Variation vs. Ambient Temperature

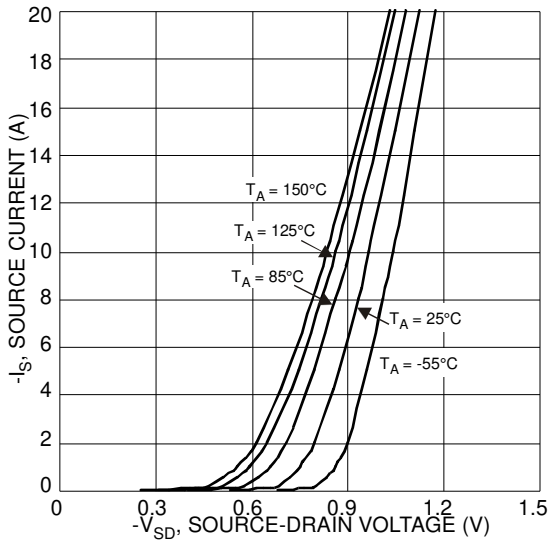


Figure 9 Diode Forward Voltage vs. Current

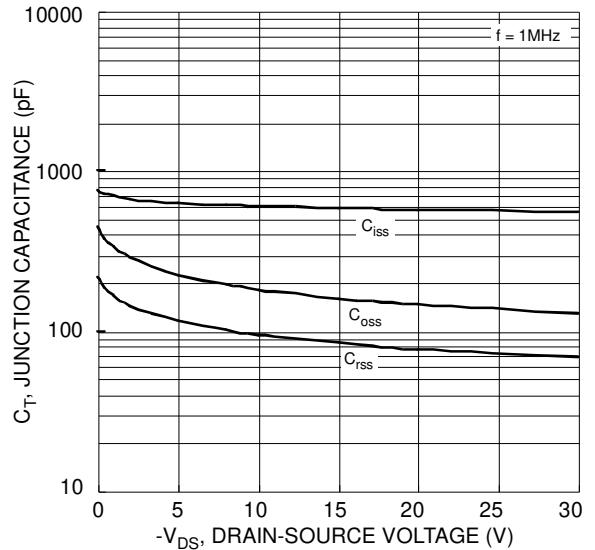


Figure 10 Typical Junction Capacitance

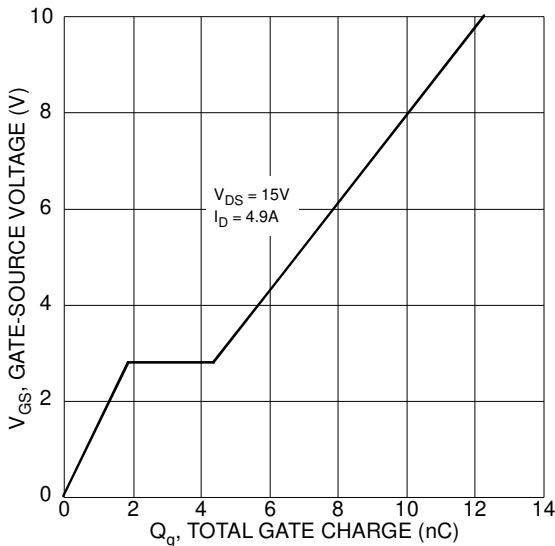


Figure 11 Gate-Charge Characteristics

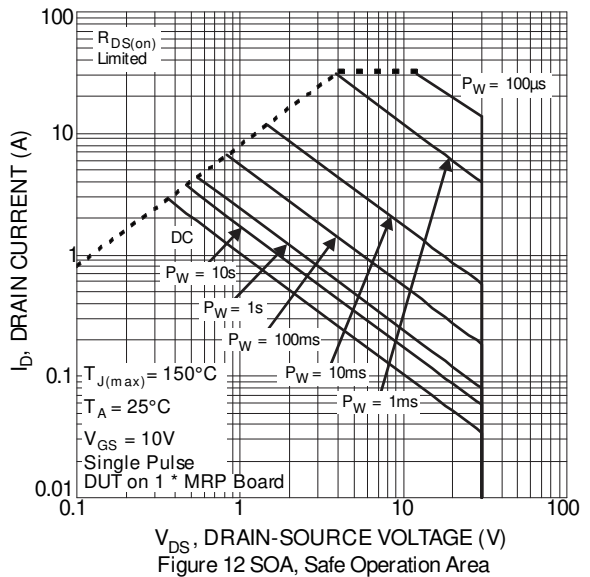
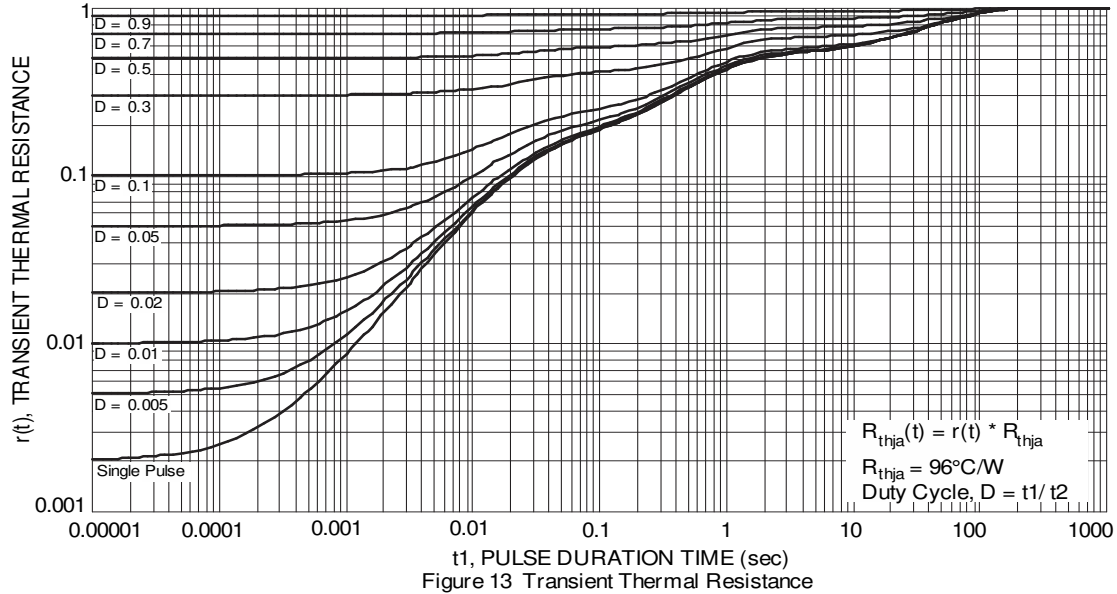
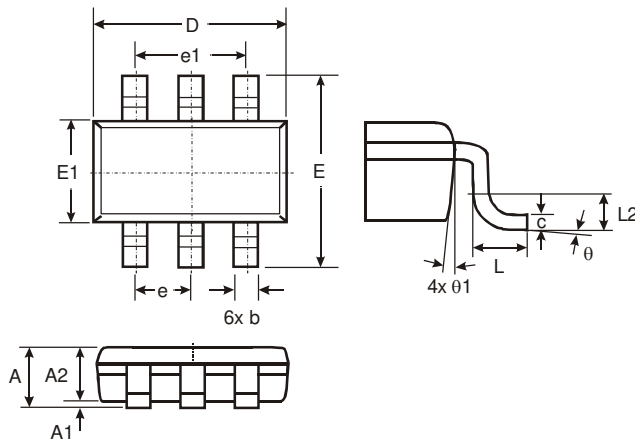


Figure 12 SOA, Safe Operation Area



**Package Outline Dimensions**

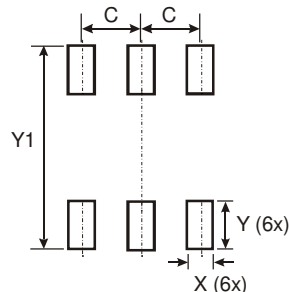
Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for the latest version.



TSOT26			
Dim	Min	Max	Typ
A	-	1.00	-
A1	0.01	0.10	-
A2	0.84	0.90	-
D	-	-	2.90
E	-	-	2.80
E1	-	-	1.60
b	0.30	0.45	-
c	0.12	0.20	-
e	-	-	0.95
e1	-	-	1.90
L	0.30	0.50	-
L2	-	-	0.25
θ	0°	8°	4°
θ1	4°	12°	-
<b>All Dimensions in mm</b>			

**Suggested Pad Layout**

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



Dimensions	Value (in mm)
C	0.950
X	0.700
Y	1.000
Y1	3.199

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