



Features

Low Input Capacitance Low On-Resistance Fast Switching Speed

Mechanical Data

Case: TSOT26

A Product Line of Diodes Incorporated

DMP2305UVT

20V P-CHANNEL ENHANCEMENT MODE MOSFET

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

Case Material: Molded Plastic, "Green" Molding Compound.

Finish – Matte Tin annealed over Copper leadframe. Solderable

UL Flammability Classification Rating 94V-0 Moisture Sensitivity: Level 1 per J-STD-020

per MIL-STD-202, Method 208 @3

Weight: 0.0013 grams (approximate)

Product Summary

V _{(BR)DSS}	Max R _{DS(on)} (Note 6)	Max I _D T _A = 25°C
	$60m\Omega @ V_{GS} = -4.5V$	-4.23A
-20V	90mΩ @ V _{GS} = -2.5V	-3.49A
	113mΩ @ V_{GS} = -1.8V	-3.11A

Description

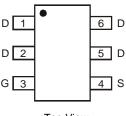
This new generation MOSFET has been designed to minimize the onstate resistance ($R_{DS(on)}$) and yet maintain superior switching performance, making it ideal for high efficiency power management applications.

Applications

- DC-DC Converters
- Motor Control
- Power management functions
- Analog Switch

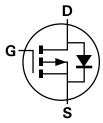


Top View



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Top View Pin-Out



Equivalent Circuit

Ordering Information (Note 4)

Part Number	Marking	Reel size (inches)	Tape width (mm)	Quantity per reel
DMP2305UVT-7	2305	7	8	3,000
DMP2305UVT-13	2305	13	8	10,000

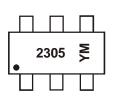
Notes: 1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.

See http://www.diodes.com 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.</p>

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

Marking Information



 $\begin{array}{l} 2305 = \mbox{Product Type Marking Code} \\ \mbox{YM} = \mbox{Date Code Marking} \\ \mbox{Y} = \mbox{Year (ex: Y = 2011)} \\ \mbox{M} = \mbox{Month (ex: 9 = September)} \end{array}$

Date Code Key

Year	2011	1	2012		2013	20	14	2015		2016	2	2017
Code	Y		Z		А	E	3	С		D		E
Month	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



Maximum Ratings (@T_A = +25°C, unless otherwise specified.)

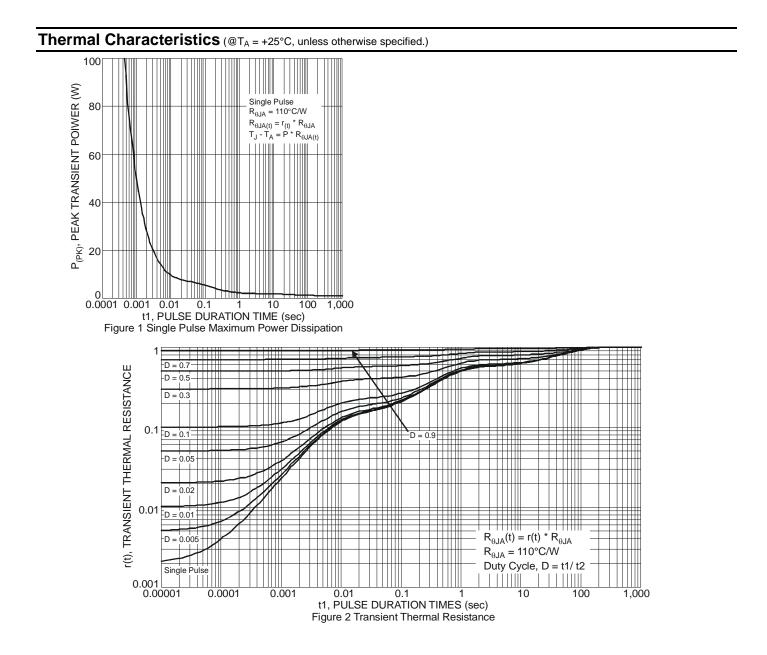
Characteristic	Symbol	Value	Units		
Drain-Source Voltage	V _{DSS}	-20	V		
Gate-Source Voltage	V _{GSS}	±8	V		
Continuous Drain Current (Note 6) V _{GS} = -4.5V	Steady State	T _A = +25°C T _A = +70°C	Ι _D	-4.23 -2.98	A
Continuous Drain Current (Note 6) V _{GS} = -2.5V	Steady State	T _A = +25°C T _A = +70°C	Ι _D	-3.49 -2.79	А
Maximum Continuous Body Diode Forward Current	Is	-4.23	А		
Pulsed Drain Current (10µs pulse, duty cycle = 1%)	I _{DM}	-16	А		

Thermal Characteristics (@T_A = +25°C, unless otherwise specified.)

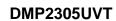
Characteristic		Symbol	Value	Units	
Total Dower Dissinction	(Note 5)	P	1.25	W	
Total Power Dissipation	(Note 6)	- P _D	1.64		
Thermel Desistance Junction to Ambient	(Note 5)	5	100		
Thermal Resistance, Junction to Ambient	(Note 6)	R _{0JA}	76	°C/W	
Thermal Resistance, Junction to Case	(Note 6)	R _{θJC}	14		
Operating and Storage Temperature Range		TJ, TSTG	-55 to 150	°C	

Notes: 5. Device mounted on FR-4 substrate PC board, 2oz copper, with minimum recommended pad layout. 6. Device mounted on FR-4 substrate PC board, 2oz copper, with 1inch square copper plate.









Electrical Characteristics @T_A = 25°C unless otherwise specified

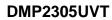
Characteristic	Symbol	Min	Тур	Max	Unit	Test Condition
OFF CHARACTERISTICS (Note 7)		1		11		
Drain-Source Breakdown Voltage	BV _{DSS}	-20	—	_	V	$V_{GS} = 0V, I_D = -250\mu A$
Zero Gate Voltage Drain Current	I _{DSS}	_	_	-1	μA	$V_{DS} = -20V, V_{GS} = 0V$
Gate-Source Leakage	I _{GSS}		—	±100	nA	$V_{GS} = \pm 8V, V_{DS} = 0V$
ON CHARACTERISTICS (Note 7)						
Gate Threshold Voltage	V _{GS(th)}	-0.5	—	-0.9	V	$V_{DS} = V_{GS}$, $I_D = -250 \mu A$
			45	60		$V_{GS} = -4.5V, I_D = -4.2A$
Static Drain-Source On-Resistance	R _{DS (ON)}		60	90	mΩ	$V_{GS} = -2.5V, I_D = -3.4A$
		_	87	113		$V_{GS} = -1.8V, I_D = -2.0A$
Forward Transfer Admittance	Y _{fs}		9	_	S	$V_{DS} = -5V, I_D = -4A$
DYNAMIC CHARACTERISTICS (Note 8)	<u>.</u>			-		
Input Capacitance	Ciss		727	—		
Output Capacitance	Coss		69		pF	$V_{DS} = -20V, V_{GS} = 0V$ f = 1.0MHz
Reverse Transfer Capacitance	C _{rss}		64	_		1 - 1.00012
Gate Resistance	R _G	_	23		Ω	$V_{GS} = 0V, V_{DS} = 0V, f = 1.0MHz$
Total Gate Charge	Qg	_	7.6	_		
Gate-Source Charge	Q _{gs}	_	1.4		nC	$V_{GS} = -4.5V, V_{DS} = -4V, I_D = -3.5A$
Gate-Drain Charge	Q _{gd}	_	1.2			
Turn-On Delay Time	t _{D(on)}		14.0	_		
Turn-On Rise Time	tr	_	13.0	_		$V_{DS} = -4V, V_{GS} = -4.5V,$
Turn-Off Delay Time	t _{D(off)}		53.8	_	ns	$R_L = 4\Omega$, $R_G = 6\Omega$, $I_D = -1A$
Turn-Off Fall Time	t _f		23.2	_		

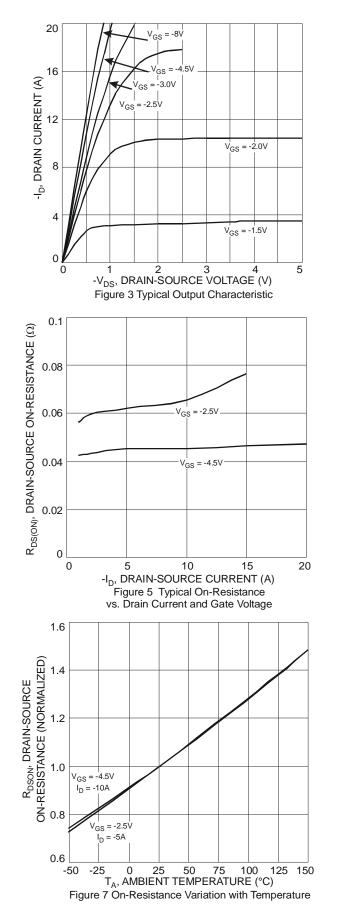
 Short duration pulse test used to minimize self-heating effect.
Guaranteed by design. Not subject to product testing. Notes:

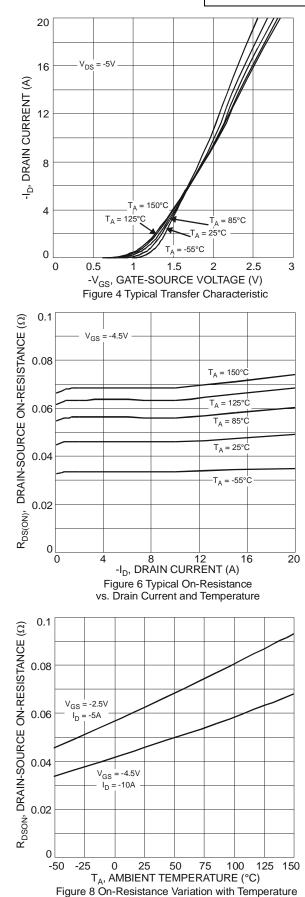


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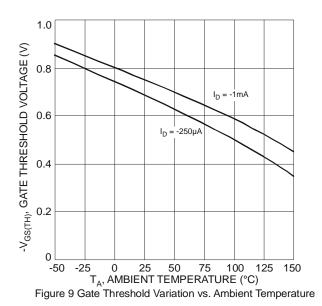


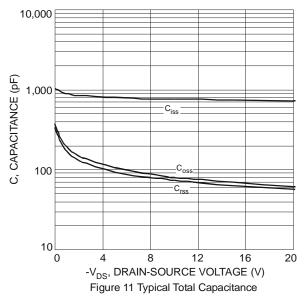


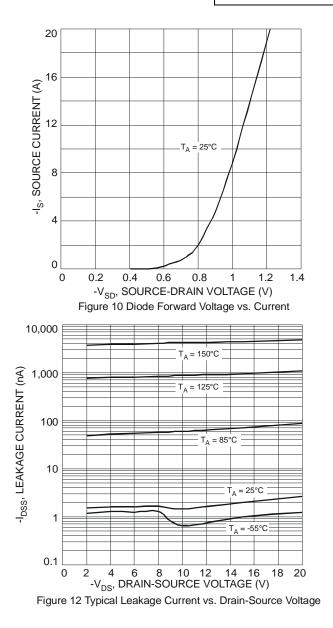








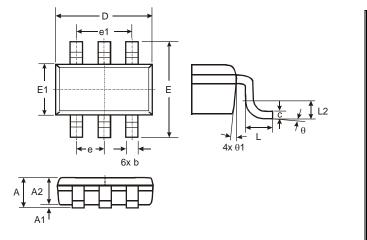






Package Outline Dimensions

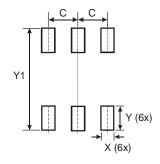
Please see AP02002 at http://www.diodes.com/datasheets/ap02002.pdf for latest version.



	TSOT26							
Dim	Min	Max	Тур					
Α	-	1.00	-					
A1	0.01	0.10	-					
A2	0.84	0.90	-					
D	_	-	2.90					
Е	-	-	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°	_					
All D	All Dimensions in mm							

Suggested Pad Layout

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



Dimensions	Value (in mm)
С	0.950
Х	0.700
Y	1.000
Y1	3.199



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