





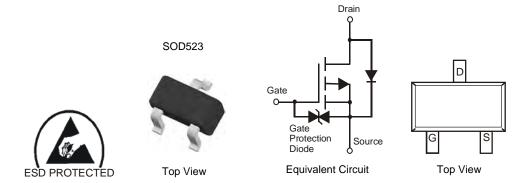
P-CHANNEL ENHANCEMENT MODE MOSFET

Features

- Low On-Resistance
- Low Gate Threshold Voltage
- Low Input Capacitance
- Fast Switching Speed
- Low Input/Output Leakage
- 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

Mechanical Data

- Case: SOT523
- 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 annealed over Alloy 42 leadframe. Solderable per MIL-STD-202, Method 208 ⁽³⁾
- Terminal Connections: See Diagram
- Weight: 0.002 grams (approximate)



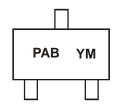
Ordering Information (Note 4)

Part Number	Case	Packaging
DMP2004TK-7	SOT523	3000/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 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.

Marking Information



PAB = Product Type Marking Code YM = Date Code Marking Y = Year (ex: T = 2006) M = Month (ex: 9 = September)

Date Code Key

Year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Code	T	U	V	W	Χ	Υ	Z	Α	В	С	D	Е
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	Ω	N	D



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

Char	acteristic		Symbol	Value	Units
Drain-Source Voltage			V _{DSS}	-20	V
Gate-Source Voltage			V _{GSS}	±8	V
Drain Current (Note 5)	Steady State	$T_A = +25$ °C $T_A = +85$ °C	I _D	-430 -310	mA
Pulsed Drain Current (Note 6)			I _{DM}	-750	mA

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

Characteristic	Symbol	Value	Units
Total Power Dissipation (Note 5)	P_{D}	150	mW
Thermal Resistance, Junction to Ambient	$R_{ hetaJA}$	833	°C/W
Operating and Storage Temperature Range	$T_{J,}T_{STG}$	-55 to +150	°C

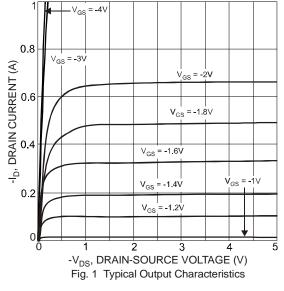
Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

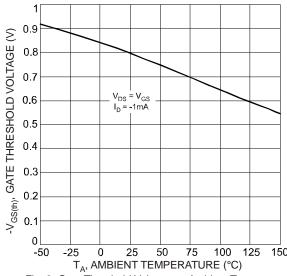
<u> </u>			_				
Characteristic	Symbol	Min	Тур	Max	Unit	Test Condition	
OFF CHARACTERISTICS (Note 7)							
Drain-Source Breakdown Voltage	BV _{DSS}	-20		_	V	$V_{GS} = 0V, I_D = -250\mu A$	
Zero Gate Voltage Drain Current	I _{DSS}		_	-1.0	μΑ	$V_{DS} = -20V, V_{GS} = 0V$	
Gate-Source Leakage	I _{GSS}	_	_	±1.0	μА	$V_{GS} = \pm 4.5V, V_{DS} = 0V$	
ON CHARACTERISTICS (Note 7)							
Gate Threshold Voltage	V _{GS(th)}	-0.5		-1.0	V	$V_{DS} = V_{GS}, I_{D} = -250 \mu A$	
			0.7	1.1		$V_{GS} = -4.5V$, $I_{D} = -430mA$	
Static Drain-Source On-Resistance	R _{DS (ON)}	_	1.1	1.6	Ω	$V_{GS} = -2.5V$, $I_D = -300$ mA	
			1.7	2.4		$V_{GS} = -1.8V, I_{D} = -150mA$	
Forward Transfer Admittance	Y _{fs}	200	_	_	ms	$V_{DS} = 10V, I_D = 0.2A$	
Diode Forward Voltage (Note 7)	V_{SD}	_	_	-1.4	V	$V_{GS} = 0V, I_{S} = -115mA$	
DYNAMIC CHARACTERISTICS				_			
Input Capacitance	C _{iss}			175	pF	101/11/	
Output Capacitance	Coss	_	_	30	pF	$V_{DS} = -16V, V_{GS} = 0V$ - f = 1.0MHz	
Reverse Transfer Capacitance	C _{rss}	_	_	20	pF	TI = 1.0IVII IZ	

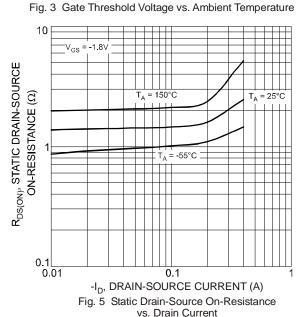
Notes: 5. Device mounted on FR-4 PCB.

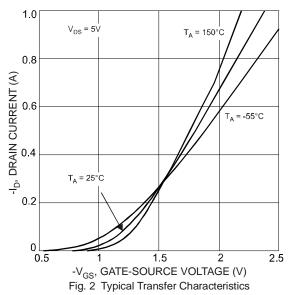
6. Pulse width $\leq\!10\mu S,$ Duty Cycle $\leq\!1\%$ 7. Short duration pulse test used to minimize self-heating effect.











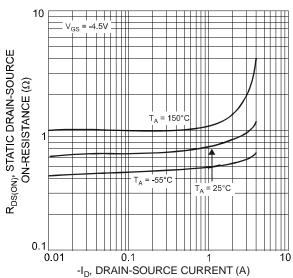


Fig. 4 Static Drain-Source On-Resistance vs. Drain Current

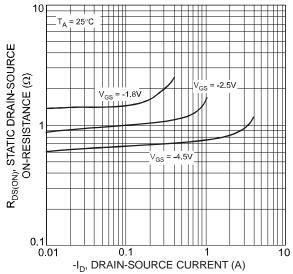


Fig. 6 Static Drain-Source On-Resistance vs. Drain-Source Current



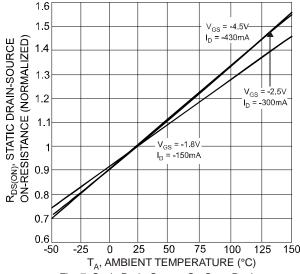


Fig. 7 Static Drain-Source On-State Resistance vs. Ambient Temperature

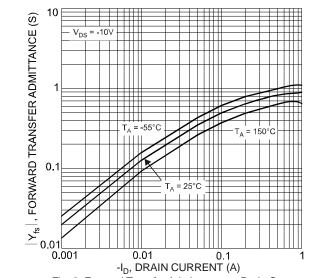


Fig. 9 Forward Transfer Admittance vs. Drain Current

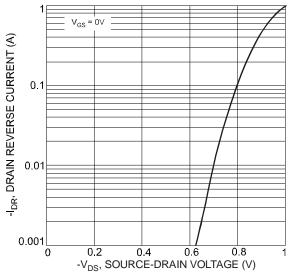
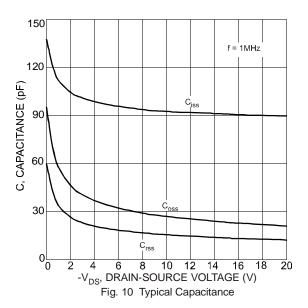
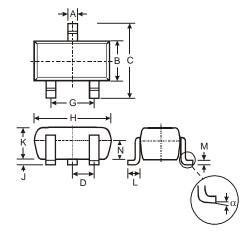


Fig. 8 Reverse Drain Current vs. Source-Drain Voltage



Package Outline Dimensions

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

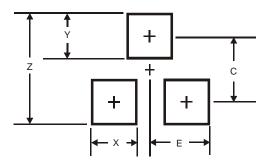


SOT523								
Dim	Min	Max	Тур					
Α	0.15	0.30	0.22					
В	0.75	0.85	0.80					
С	1.45	1.75	1.60					
D	_	_	0.50					
G	0.90	1.10	1.00					
Н	1.50	1.70	1.60					
7	0.00	0.10	0.05					
K	0.60	0.80	0.75					
L	0.10	0.30	0.22					
М	0.10	0.20	0.12					
N	0.45	0.65	0.50					
α	0°	8°	_					
All Dimensions in mm								



Suggested Pad Layout

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



Dimensions	Value (in mm)
Z	1.8
Х	0.4
Υ	0.51
С	1.3
Е	0.7

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