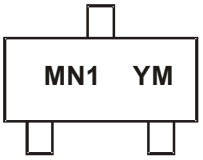
Marking Information



MN1 = Product Type Marking Code
YM = Date Code Marking
Y or Y= Year ex: I = 2021
M = Month ex: 9 = September

Date Code Key

Year	2008	……	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Code	V	……	I	J	K	L	M	N	O	P	R	S

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 (@ T_A = +25°C unless otherwise specified)

Characteristic		Symbol	Value	Units
Drain-Source Voltage		V_{DSS}	60	V
Gate-Source Voltage	Continuous	Continuous	±20	V
Drain Current (Note 5)	Continuous Continuous @ +100°C Pulsed	Continuous	115 73 800	mA

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

Characteristic	Symbol	Value	Units
Total Power Dissipation (Note 5)	P_D	200	mW
Thermal Resistance, Junction to Ambient (Note 5)	$R_{\theta JA}$	625	°C/W
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +150	°C

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

Characteristic		Symbol	Min	Typ	Max	Unit	Test Condition
OFF CHARACTERISTICS (Note 6)							
Drain-Source Breakdown Voltage		BV_{DSS}	60	70	—	V	V_{GS} = 0V, I_D = 10µA
Zero Gate Voltage Drain Current	@ T_C = +25°C @ T_C = +125°C	I_{DSS}	—	—	1.0 500	µA	V_{DS} = 60V, V_{GS} = 0V
Gate-Body Leakage		I_{GSS}	—	—	±5	µA	V_{GS} = ±20V, V_{DS} = 0V
ON CHARACTERISTICS (Note 6)							
Gate Threshold Voltage		$V_{GS(th)}$	1.2	—	2.0	V	V_{DS} = V_{GS}, I_D = 250µA
Static Drain-Source On-Resistance	@ T_C = +25°C	$R_{DS(on)}$	—	3.5	6	Ω	V_{GS} = 5.0V, I_D = 0.115A
	@ T_C = +125°C			3.0	5		V_{GS} = 10V, I_D = 0.115A
Forward Transconductance		g_{FS}	80	—	—	mS	V_{DS} = 10V, I_D = 0.115A
DYNAMIC CHARACTERISTICS (Note 7)							
Input Capacitance		C_{iss}	—	23	—	pF	V_{DS} = 25V, V_{GS} = 0V, f = 1.0MHz
Output Capacitance		C_{oss}	—	3.4	—	pF	
Reverse Transfer Capacitance		C_{rss}	—	1.4	—	pF	
SWITCHING CHARACTERISTICS (Note 7)							
Turn-On Delay Time		$t_{D(on)}$	—	10	—	ns	V_{DD} = 30V, I_D = 0.115A, R_L = 150Ω, V_{GEN} = 10V, R_{GEN} = 25Ω
Turn-Off Delay Time		$t_{D(off)}$	—	33	—	ns	

Notes: 5. Device mounted on 1" x 1" FR-4 PCB with high coverage 2oz. Copper, single sided.
6. Short duration pulse test used to minimize self-heating effect.
7. Guaranteed by design. Not subject to product testing.

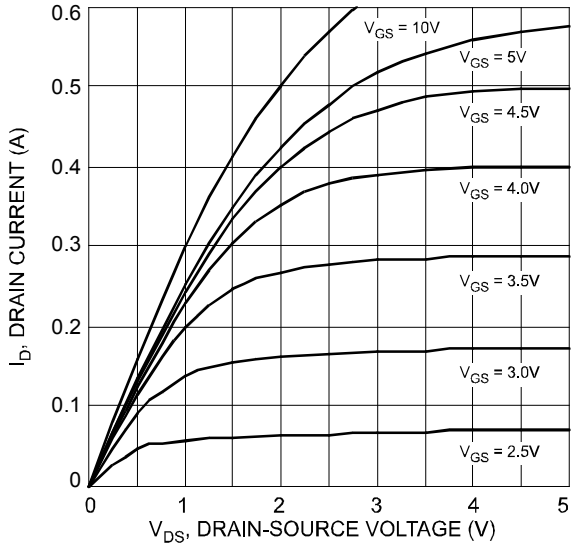


Fig.1 Typical Output Characteristic

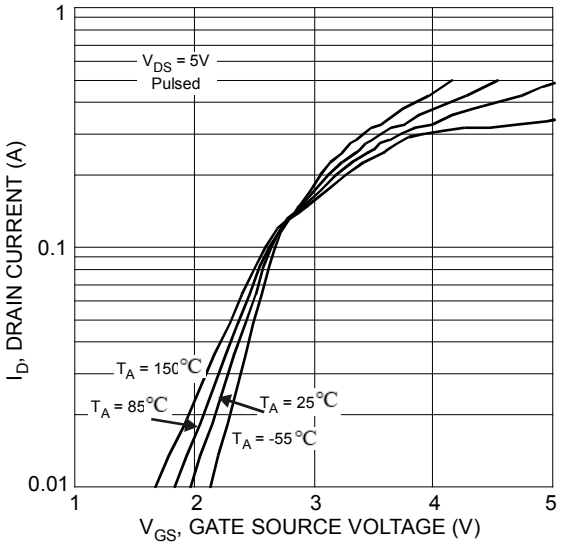


Fig. 2 Typical Transfer Characteristics

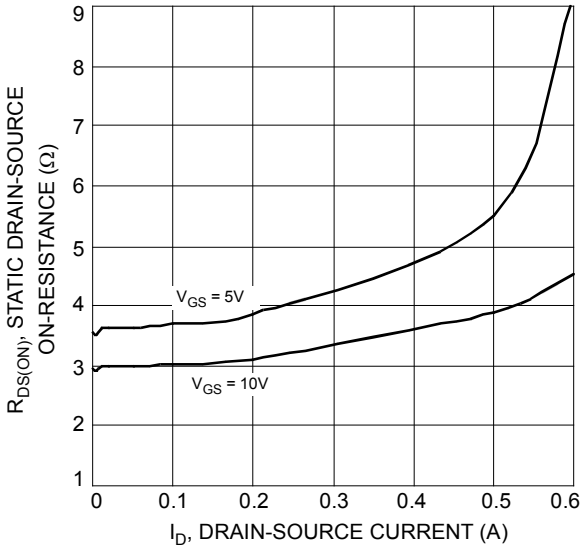


Fig. 3 On-Resistance vs. Drain Current & Gate Voltage

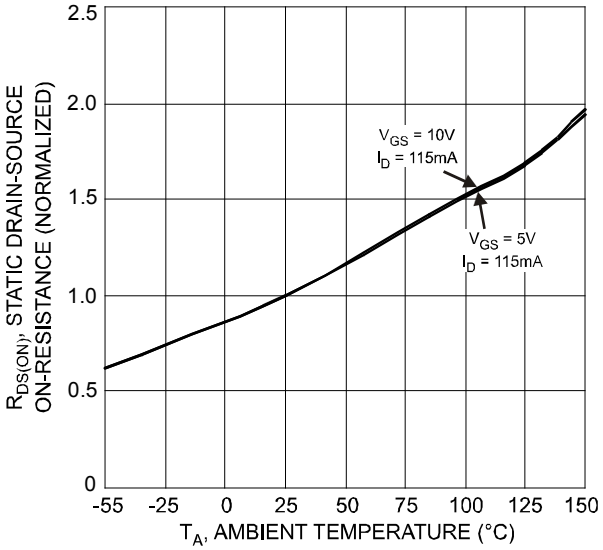


Fig. 4 Normalized Static Drain-Source On-Resistance vs. Ambient Temperature

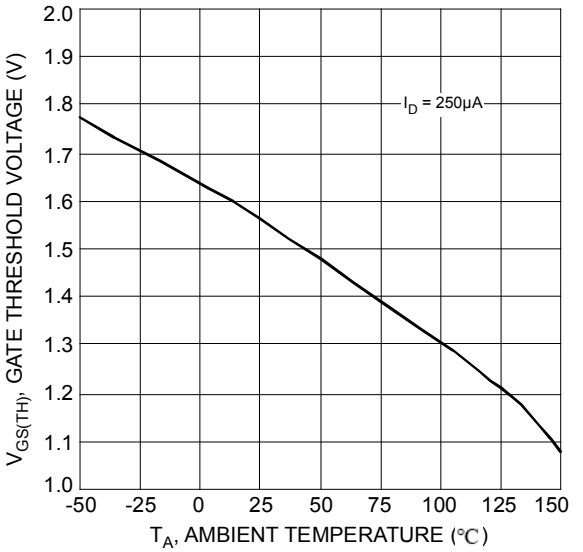


Fig. 5 Gate Threshold Variation vs. Ambient Temperature

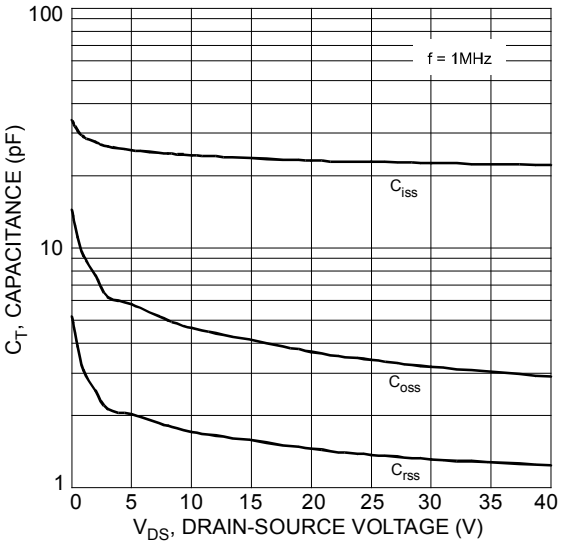


Fig. 6 Typical Total Capacitance

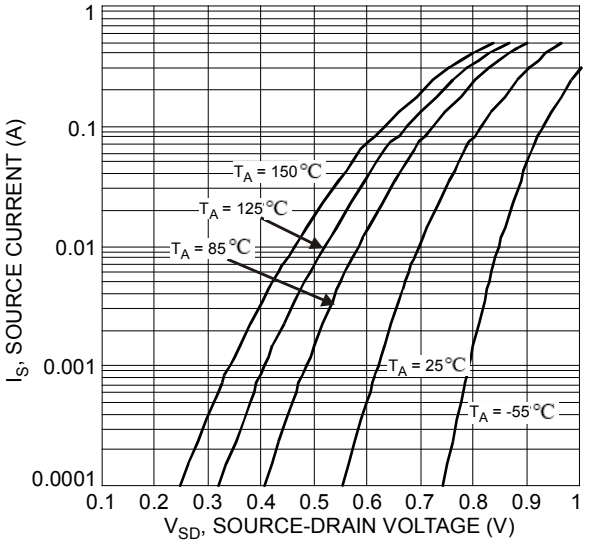
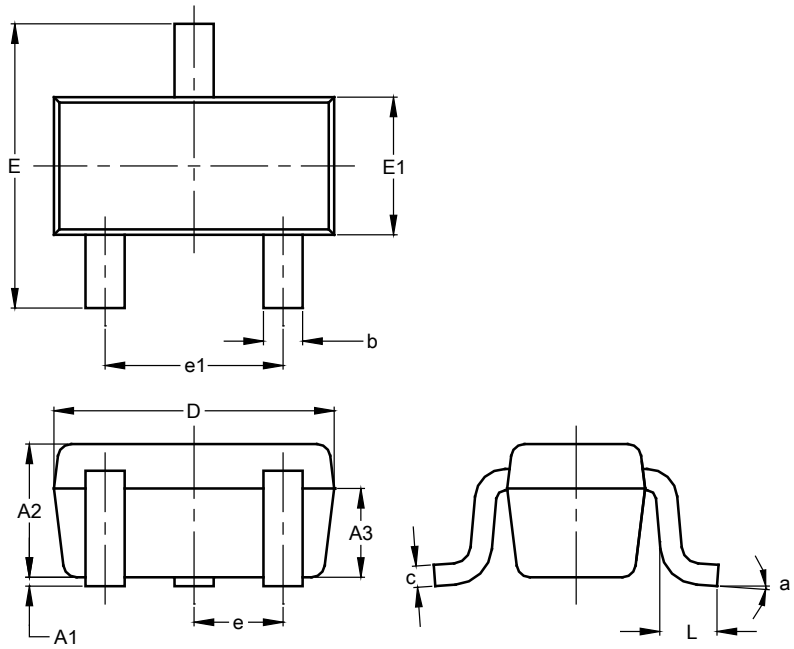


Fig. 7 Reverse Drain Current vs. Source-Drain Voltage

Package Outline Dimensions

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

SOT523

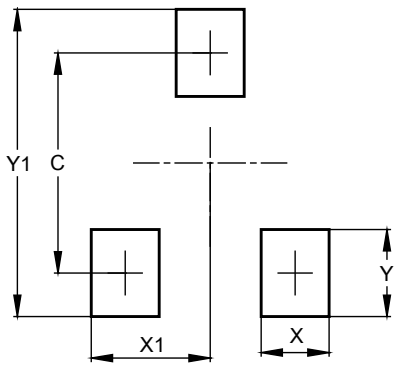


SOT523			
Dim	**Min**	**Max**	**Typ**
A1	0.00	0.10	0.05
A2	0.60	0.80	0.75
A3	0.45	0.65	0.50
b	0.15	0.30	0.22
c	0.10	0.20	0.12
D	1.50	1.70	1.60
E	1.45	1.75	1.60
E1	0.75	0.85	0.80
e	0.50 BSC		
e1	0.90	1.10	1.00
L	0.20	0.40	0.33
a	0°	--	8°
All Dimensions in mm			

Suggested Pad Layout

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

SOT523



Dimensions	Value (in mm)
C	1.29
X	0.40
X1	0.70
Y	0.51
Y1	1.80

IMPORTANT NOTICE

1. DIODES INCORPORATED AND ITS SUBSIDIARIES ("DIODES") MAKE NO WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, WITH REGARDS TO ANY INFORMATION CONTAINED IN THIS DOCUMENT, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT OF THIRD PARTY INTELLECTUAL PROPERTY RIGHTS (AND THEIR EQUIVALENTS UNDER THE LAWS OF ANY JURISDICTION).

2. The Information contained herein is for informational purpose only and is provided only to illustrate the operation of Diodes products described herein and application examples. Diodes does not assume any liability arising out of the application or use of this document or any product described herein. This document is intended for skilled and technically trained engineering customers and users who design with Diodes products. Diodes products may be used to facilitate safety-related applications; however, in all instances customers and users are responsible for (a) selecting the appropriate Diodes products for their applications, (b) evaluating the suitability of the Diodes products for their intended applications, (c) ensuring their applications, which incorporate Diodes products, comply the applicable legal and regulatory requirements as well as safety and functional-safety related standards, and (d) ensuring they design with appropriate safeguards (including testing, validation, quality control techniques, redundancy, malfunction prevention, and appropriate treatment for aging degradation) to minimize the risks associated with their applications.

3. Diodes assumes no liability for any application-related information, support, assistance or feedback that may be provided by Diodes from time to time. Any customer or user of this document or products described herein will assume all risks and liabilities associated with such use, and will hold Diodes and all companies whose products are represented herein or on Diodes' websites, harmless against all damages and liabilities.

4. Products described herein may be covered by one or more United States, international or foreign patents and pending patent applications. Product names and markings noted herein may also be covered by one or more United States, international or foreign trademarks and trademark applications. Diodes does not convey any license under any of its intellectual property rights or the rights of any third parties (including third parties whose products and services may be described in this document or on Diodes' website) under this document.

5. Diodes products are provided subject to Diodes' Standard Terms and Conditions of Sale (https://www.diodes.com/about/company/terms-and-conditions/terms-and-conditions-of-sales/) or other applicable terms. This document does not alter or expand the applicable warranties provided by Diodes. Diodes does not warrant or accept any liability whatsoever in respect of any products purchased through unauthorized sales channel.

6. Diodes products and technology may not be used for or incorporated into any products or systems whose manufacture, use or sale is prohibited under any applicable laws and regulations. Should customers or users use Diodes products in contravention of any applicable laws or regulations, or for any unintended or unauthorized application, customers and users will (a) be solely responsible for any damages, losses or penalties arising in connection therewith or as a result thereof, and (b) indemnify and hold Diodes and its representatives and agents harmless against any and all claims, damages, expenses, and attorney fees arising out of, directly or indirectly, any claim relating to any noncompliance with the applicable laws and regulations, as well as any unintended or unauthorized application.

7. While efforts have been made to ensure the information contained in this document is accurate, complete and current, it may contain technical inaccuracies, omissions and typographical errors. Diodes does not warrant that information contained in this document is error-free and Diodes is under no obligation to update or otherwise correct this information. Notwithstanding the foregoing, Diodes reserves the right to make modifications, enhancements, improvements, corrections or other changes without further notice to this document and any product described herein. This document is written in English but may be translated into multiple languages for reference. Only the English version of this document is the final and determinative format released by Diodes.

8. Any unauthorized copying, modification, distribution, transmission, display or other use of this document (or any portion hereof) is prohibited. Diodes assumes no responsibility for any losses incurred by the customers or users or any third parties arising from any such unauthorized use.

www.diodes.com