imall

Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from, Europe, America and south Asia, supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts, Customers Priority, Honest Operation, and Considerate Service", our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip, ALPS, ROHM, Xilinx, Pulse, ON, Everlight and Freescale. Main products comprise IC, Modules, Potentiometer, IC Socket, Relay, Connector. Our parts cover such applications as commercial, industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832 Email & Skype: info@chipsmall.com Web: www.chipsmall.com Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



Power MOSFET

60 V, 155 m Ω , Single N–Channel Logic Level, SOT-23

Features

- Small Footprint Industry Standard Surface Mount SOT-23 Package
- Low R_{DS(on)} for Low Conduction Losses and Improved Efficiency
- These Devices are Pb-Free, Halogen Free/BFR Free and are RoHS Compliant

Param	Symbol	Value	Unit		
Drain-to-Source Voltage			V _{DSS}	60	V
Gate-to-Source Voltage			V _{GS}	±20	V
Continuous Drain	Steady	$T_A = 25^{\circ}C$	I _D	2.2	А
Current $R_{\Psi J-mb}$ (Notes 1, 2, 3, and 4)	State	$T_A = 100^{\circ}C$		1.6	
Power Dissipation		$T_A = 25^{\circ}C$	PD	1.5	W
R _{ΨJ-mb} (Notes 1 and 3)		T _A = 100°C		0.6	
Continuous Drain	Steady State	$T_A = 25^{\circ}C$	Ι _D	1.7	А
Current R _{θJA} (Note 1, 2, 3, and 4)	Sidle	$T_A = 100^{\circ}C$		1.2	
Power Dissipation $R_{\theta JA}$		$T_A = 25^{\circ}C$	PD	0.9	W
(Notes 1 and 3)		$T_A = 100^{\circ}C$		0.4	
Pulsed Drain Current		= 25°C, = 10 μs	I _{DM}	27	A
Operating Junction and Storage Temperature			T _J , T _{stg}	–55 to 150	°C
Source Current (Body Diode)			IS	1.9	А
Lead Temperature for Soldering Purposes (1/8" from case for 10 s)			ΤL	260	°C

MAXIMUM RATINGS (T_J = 25°C unless otherwise noted)

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

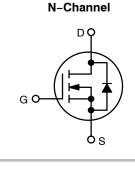
- 1. The entire application environment impacts the thermal resistance values shown, they are not constants and are only valid for the particular conditions noted.
- 2. Psi (Ψ) is used as required per JESD51-12 for packages in which substantially less than 100% of the heat flows to single case surface.
- 3. Surface-mounted on FR4 board using a 650 mm2, 2 oz. Cu pad.
- Maximum current for pulses as long as 1 second is higher but is dependent 4.

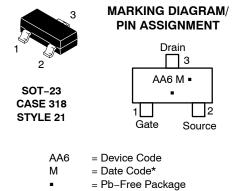


ON Semiconductor®

www.onsemi.com

V _{(BR)DSS}	R _{DS(on)} TYP	I _D MAX
60 V	155 mΩ @ 10 V	2.2 A
00 1	205 mΩ @ 4.5 V	





(Note: Microdot may be in either location)

*Date Code orientation may vary depending upon manufacturing location.

ORDERING INFORMATION

Device	Package	Shipping [†]
NTR5198NLT1G	SOT-23 (Pb-Free)	3000 / Tape & Reel
NTR5198NLT3G	SOT-23 (Pb-Free)	10000 / Tape & Reel

+For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specification Brochure, BRD8011/D.

on pulse duration and duty cycle.

THERMAL RESISTANCE RATINGS

Parameter	Symbol	Мах	Unit
Junction-to-Lead #3 - Drain (Notes 2 and 3)	$R_{\Psi J-mb}$	86	°C/W
Junction-to-Ambient - Steady State (Note 3)	$R_{\theta JA}$	139	°C/W

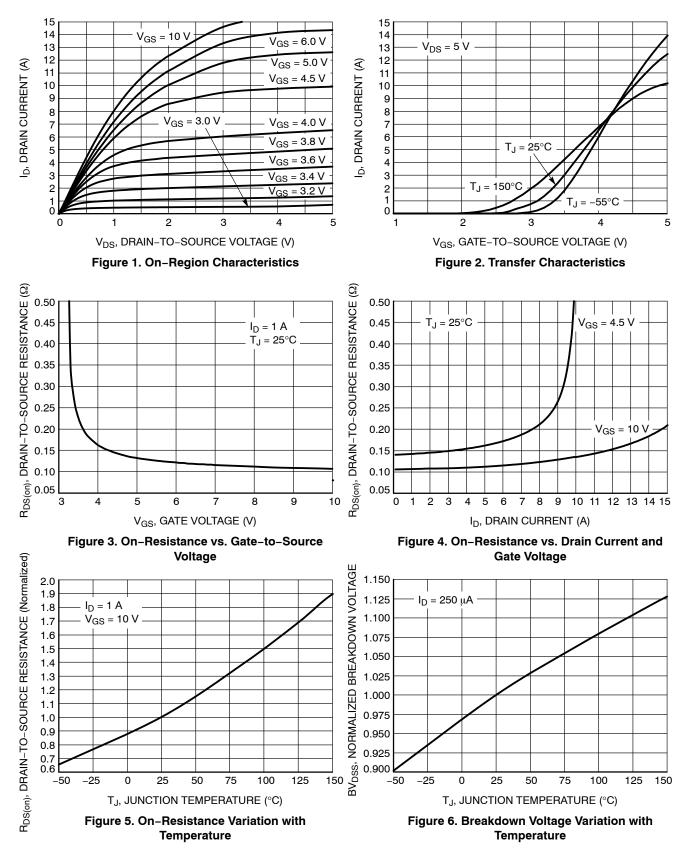
ELECTRICAL CHARACTERISTICS (T_J = 25°C unless otherwise noted)

Parameter	Symbol	Test Conditions		Min	Тур	Max	Unit
OFF CHARACTERISTICS							
Drain-to-Source Breakdown Voltage	V _{(BR)DSS}	V_{GS} = 0 V, I _D = 250 µA		60			V
Drain-to-Source Breakdown Voltage Temperature Coefficient	V _{(BR)DSS} /T _J	Reference to 25°C, I_D = 250 μA			70		mV/°C
Zero Gate Voltage Drain Current	I _{DSS}	V _{GS} = 0 V, T _J = 25°C				1.0	μA
		$V_{\rm DS} = 60 \text{ V}$	T _J = 125°C	1		10	
Gate-to-Source Leakage Current	I _{GSS}	V _{DS} = 0 V, V	′ _{GS} = ±20 V			±100	nA
ON CHARACTERISTICS (Note 5)	•			•			
Gate Threshold Voltage	V _{GS(TH)}	V _{GS} = V _{DS} ,	I _D = 250 μA	1.5		2.5	V
Threshold Temperature Coefficient	V _{GS(TH)} /T _J	Reference to 25	ö°C, I _D = 250 μA		-6.5		mV/°C
Drain-to-Source On-Resistance	R _{DS(on)}	V _{GS} = 10	V, I _D = 1 A		107	155	mΩ
	, ,	V _{GS} = 4.5			142	205	1
Forward Transconductance	9 FS	V _{DS} = 5.0 V, I _D = 1 A			3		S
CHARGES, CAPACITANCES & GAT	E RESISTANCE						
Input Capacitance	C _{iss}	V _{GS} = 0 V, f = 1.0 MHz, V _{DS} = 25 V			182		pF
Output Capacitance	C _{oss}				25		
Reverse Transfer Capacitance	C _{rss}				16		
Total Gate Charge	Q _{G(TOT)}	V _{DS} = 48 V,	V _{GS} = 4.5 V		2.8		nC
	(/	$I_D = 1 A$	V _{GS} = 10 V		5.1		1
Threshold Gate Charge	Q _{G(TH)}				0.3		
Gate-to-Source Charge	Q _{GS}	V _{DS} = 48 V, I _D = 1 A			0.8		1
Gate-to-Drain Charge	Q _{GD}	V _{GS} =	= 10 V		1.5		
Plateau Voltage	V _{GP}				3.1		V
Gate Resistance	R _G			1	8		Ω
SWITCHING CHARACTERISTICS (N	ote 6)			•	•	-	•
Turn-On Delay Time	t _{d(on)}				5		ns
Rise Time	t _r	Vpe = 30 V.	V _{GS} = 10 V,		7		
Turn-Off Delay Time	t _{d(off)}	I _D = 1 A, I	$R_{G} = 10 \Omega$		13		
Fall Time	t _f				2		1
DRAIN-SOURCE DIODE CHARACT	ERISTICS				•		
Forward Diode Voltage	V _{SD}	V _{GS} = 0 V, I _S = 1 A	$T_J = 25^{\circ}C$		0.8	1.2	V
Ŭ			T _J = 125°C		0.6		1
Reverse Recovery Time	t _{rr}				12		ns
Charge Time	t _a	$\label{eq:IS} \begin{split} I_S = 1 \; A_{dc}, \; V_{GS} = 0 \; V_{dc}, \\ dI_S/dt = 100 \; A/\mu s \end{split}$			9		1
Discharge Time	t _b				3		1
Reverse Recovery Stored Charge	Q _{RR}				6		nC

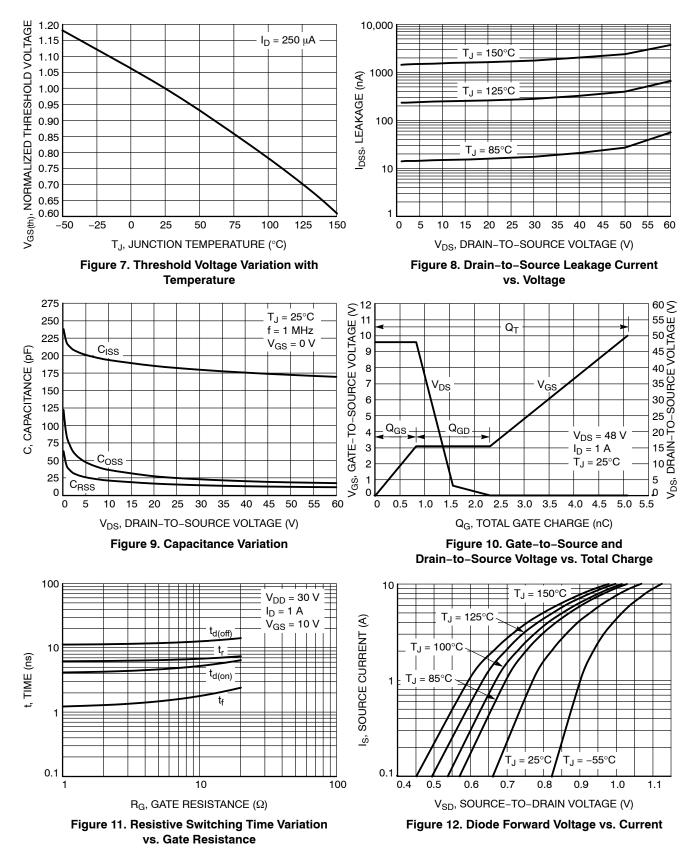
Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions. 5. Pulse Test: Pulse Width \leq 300 μ s, Duty Cycle \leq 2%.

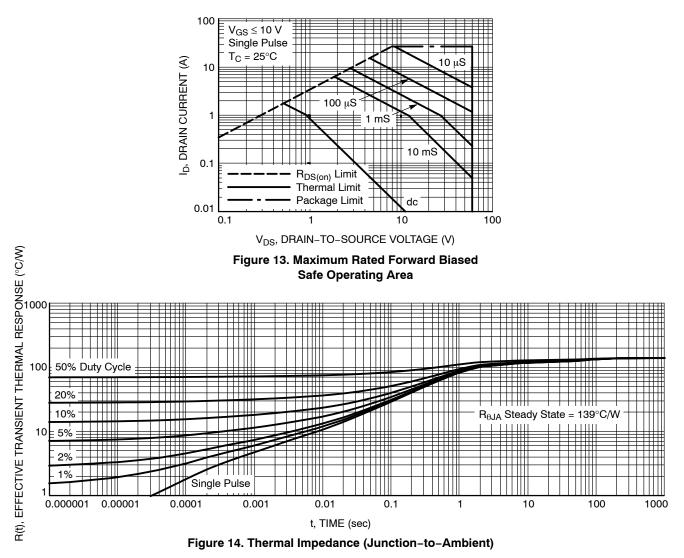
6. Switching characteristics are independent of operating junction temperatures.

TYPICAL CHARACTERISTICS







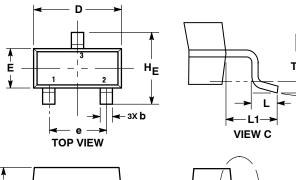


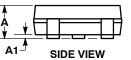
TYPICAL CHARACTERISTICS

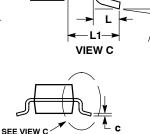
PACKAGE DIMENSIONS

SOT-23 (TO-236) CASE 318-08 **ISSUE AR**

0.25







END VIEW

NOTES:

- 1.
- DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994. CONTROLLING DIMENSION: MILLIMETERS. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF з.
- THE BASE MATERIAL.
 DIMENSIONS D AND E DO NOT INCLUDE MOLD FLASH, PROTRUSIONS, OR GATE BURRS.

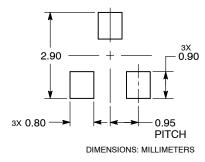
HO HOSIONS, ON GATE BONNS.							
	MILLIMETERS			INCHES			
DIM	MIN	NOM	MAX	MIN	NOM	MAX	
Α	0.89	1.00	1.11	0.035	0.039	0.044	
A1	0.01	0.06	0.10	0.000	0.002	0.004	
b	0.37	0.44	0.50	0.015	0.017	0.020	
c	0.08	0.14	0.20	0.003	0.006	0.008	
D	2.80	2.90	3.04	0.110	0.114	0.120	
Е	1.20	1.30	1.40	0.047	0.051	0.055	
е	1.78	1.90	2.04	0.070	0.075	0.080	
L	0.30	0.43	0.55	0.012	0.017	0.022	
L1	0.35	0.54	0.69	0.014	0.021	0.027	
HE	2.10	2.40	2.64	0.083	0.094	0.104	
Т	0°		10 °	0 °		10 °	

STYLE 21: PIN 1. GATE

2. SOURCE

DRAIN з

RECOMMENDED SOLDERING FOOTPRINT*



*For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

ON Semiconductor and we trademarks of Semiconductor Components Industries, LLC dba ON Semiconductor or its subsidiaries in the United States and/or other countries. ON Semiconductor owns the rights to a number of patents, trademarks, copyrights, trade secrets, and other intellectual property. A listing of ON Semiconductor's product/patent coverage may be accessed at www.onsemi.com/site/pdf/Patent-Marking.pdf. ON Semiconductor reserves the right to make changes without further notice to any products herein. Coverage may be accessed at www.onsemi.com/site/pont/atent-Marking.por. ON Semiconductor reserves the right to make changes winnout further notice to any products nerein. ON Semiconductor makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does ON Semiconductor assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. Buyer is responsible for its products and applications using ON Semiconductor products, including compliance with all laws, regulations and safety requirements or standards, regardless of any support or applications information provided by ON Semiconductor. "Typical" parameters which may be provided in ON Semiconductor data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. ON Semiconductor does not convey any license under its patent rights or the rights of others. ON Semiconductor reservey any license under its patent rights nor the rights of others. ON semiconductor products are not designed intended or submicined for uppen or explicit for uppen or explicit for uppen or explicit disclassing oreasing or explicit. designed, intended, or authorized for use as a critical component in life support systems or any FDA Class 3 medical devices or medical devices with a same or similar classification in a foreign jurisdiction or any devices intended for implantation in the human body. Should Buyer purchase or use ON Semiconductor products for any such unintended or unauthorized application, Buyer shall indemnify and hold ON Semiconductor and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that ON Semiconductor was negligent regarding the design or manufacture of the part. ON Semiconductor is an Equal Opportunity/Affirmative Action Employer. This literature is subject to all applicable copyright laws and is not for resale in any manner.

PUBLICATION ORDERING INFORMATION

LITERATURE FULFILLMENT

Literature Distribution Center for ON Semiconductor 19521 E. 32nd Pkwy, Aurora, Colorado 80011 USA Phone: 303-675-2175 or 800-344-3860 Toll Free USA/Canada Fax: 303-675-2176 or 800-344-3867 Toll Free USA/Canada Email: orderlit@onsemi.com

N. American Technical Support: 800-282-9855 Toll Free USA/Canada Europe, Middle East and Africa Technical Support:

Phone: 421 33 790 2910 Japan Customer Focus Center Phone: 81-3-5817-1050

ON Semiconductor Website: www.onsemi.com

Order Literature: http://www.onsemi.com/orderlit

For additional information, please contact your local Sales Representative