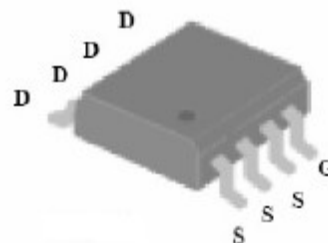


N-Channel, 30.5V, 12.3A, Power MOSFET

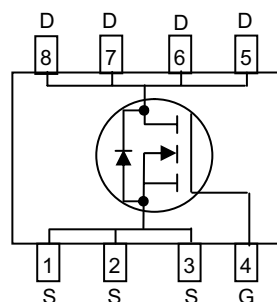
$V_{(BR)DSS}$	$R_{ds(on)}$ (Ω)	I_d (A)
30.5	0.0105@ 10V	9.0
	0.0105@ 10V	3.0
	0.013@ 4.5V	7.0



SOP-8L

Descriptions

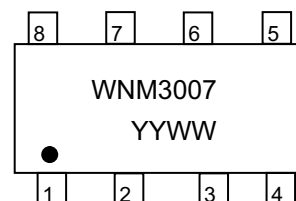
The WNM3007 is N-Channel enhancement MOS Field Effect Transistor. Uses advanced trench technology and design to provide excellent $R_{DS(ON)}$ with low gate charge. This device is suitable for use in DC-DC conversion and power switch applications. Standard Product WNM3007 is Pb-free.



Configuration (Top View)

Features

- Trench Technology
- Supper high density cell design
- Excellent ON resistance for higher DC current
- Extremely Low Threshold Voltage
- Small package SOP-8L



WNM3007 = Device Code
YY = Year
WW = Week

Marking

Applications

- Driver for Relay, Solenoid, Motor, LED etc.
- DC-DC converter circuit
- Power Switch
- Load Switch
- Charging

Order Information

Device	Package	Shipping
WNM3007-8/TR	SOP-8L	2500/Tape&Reel

Absolute Maximum ratings

Parameter		Symbol	10 S	Steady State	Unit
Drain-Source Voltage		V _{DS}	30		V
Gate-Source Voltage		V _{GS}	±20		
Continuous Drain Current ^a	T _A =25°C	I _D	12.3	9.1	A
	T _A =70°C		9.8	7.3	
Maximum Power Dissipation ^a	T _A =25°C	P _D	3.0	1.6	W
	T _A =70°C		1.9	1.0	
Continuous Drain Current ^b	T _A =25°C	I _D	11.1	8.8	A
	T _A =70°C		8.9	7.0	
Maximum Power Dissipation ^b	T _A =25°C	P _D	2.5	1.5	W
	T _A =70°C		1.6	1.0	
Pulsed Drain Current ^c		I _{DM}	40		A
Operating Junction Temperature		T _J	150		°C
Lead Temperature		T _L	260		°C
Storage Temperature Range		T _{stg}	-55 to 150		°C

Parameter		Symbol	Typical	Maximum	Unit
Junction-to-Ambient Thermal Resistance ^a	$t \leq 10 \text{ s}$	$R_{\theta JA}$	41	52	$^{\circ}\text{C/W}$
	Steady State		75	98	
Junction-to-Ambient Thermal Resistance ^b	$t \leq 10 \text{ s}$	$R_{\theta JA}$	50	62	
	Steady State		80	103	
Junction-to-Case Thermal Resistance	Steady State	$R_{\theta JC}$	27	35	

a Surface mounted on FR4 Board using 1 square inch pad size, 1oz copper

b Surface mounted on FR4 board using minimum pad size, 1oz copper

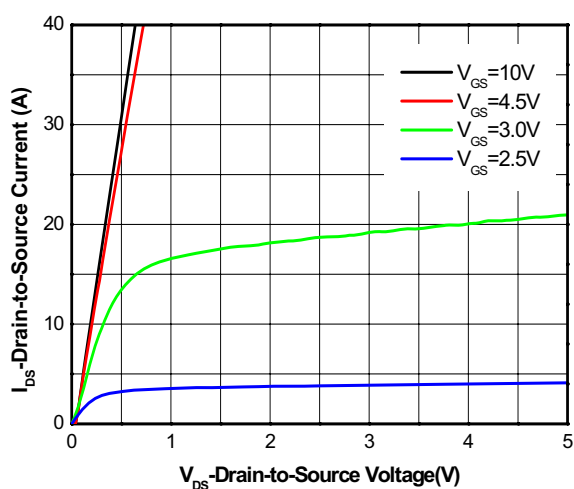
c Repetitive rating, pulse width limited by junction temperature, $t_p=10\mu\text{s}$, Duty Cycle=1%

d Repetitive rating, pulse width limited by junction temperature $T_J=150^{\circ}\text{C}$.

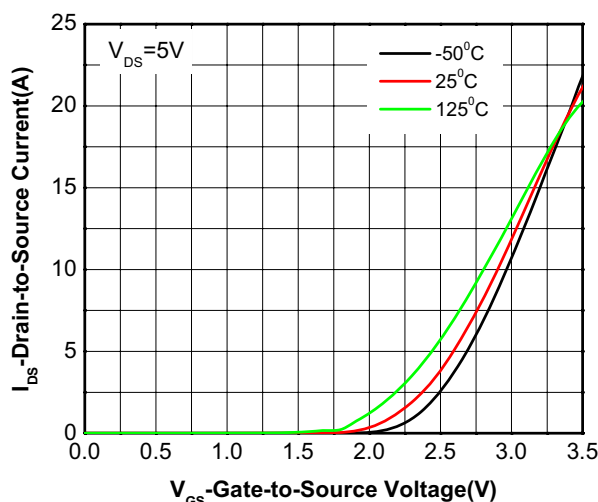
Electronics Characteristics (Ta=25°C, unless otherwise noted)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
OFF CHARACTERISTICS						
Drain-to-Source Breakdown Voltage	BV _{DSS}	V _{GS} = 0 V, I _D = 250uA	30.5			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 30 V, V _{GS} = 0V			100	nA
Gate-to-source Leakage Current	I _{GSS}	V _{DS} = 0 V, V _{GS} = ±20V			±100	nA
ON CHARACTERISTICS						
Gate Threshold Voltage	V _{GS(TH)}	V _{GS} = V _{DS} , I _D = 250uA	1.0	1.45	1.8	V
Drain-to-source On-resistance	R _{DS(on)}	V _{GS} = 10V, I _D = 9.0A		10.5	13	mΩ
		V _{GS} = 10V, I _D = 3.0A		10.5	13	
		V _{GS} = 4.5V, I _D = 7.0A		13.0	16	
Forward Transconductance	g _{FS}	V _{DS} = 15V, I _D = 9.0A		7.0		S
CHARGES, CAPACITANCES AND GATE RESISTANCE						
Input Capacitance	C _{ISS}	V _{GS} = 0 V, f = 1.0 MHz, V _{DS} = 25 V		1500		pF
Output Capacitance	C _{OSS}			158		
Reverse Transfer Capacitance	C _{RSS}			145		
Total Gate Charge	Q _{G(TOT)}	V _{GS} =10 V, V _{DS} =15 V, I _D =10A		36		nC
Threshold Gate Charge	Q _{G(TH)}			2.35		
Gate-to-Source Charge	Q _{GS}			4.0		
Gate-to-Drain Charge	Q _{GD}			8.5		
SWITCHING CHARACTERISTICS						
Turn-On Delay Time	td(ON)	V _{GS} = 10 V, V _{DD} = 15 V, I _D =2A, R _G =6 Ω		14.5		ns
Rise Time	tr			7.2		
Turn-Off Delay Time	td(OFF)			59		
Fall Time	tf			10.2		
BODY DIODE CHARACTERISTICS						
Forward Voltage	V _{SD}	V _{GS} = 0 V, I _S = 1.5A	0.45	0.75	1.05	V

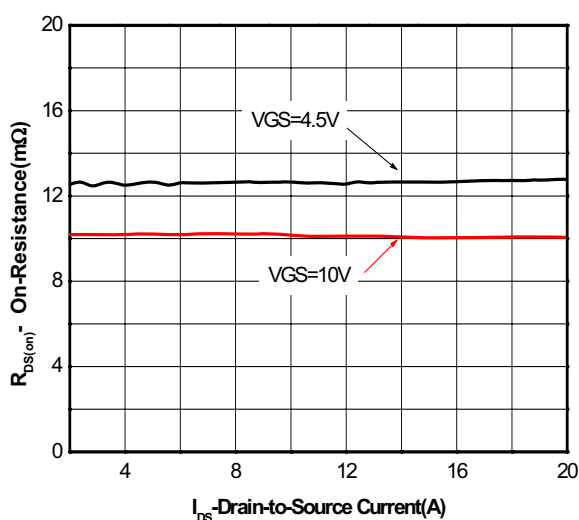
Typical Characteristics (Ta=25°C, unless otherwise noted)



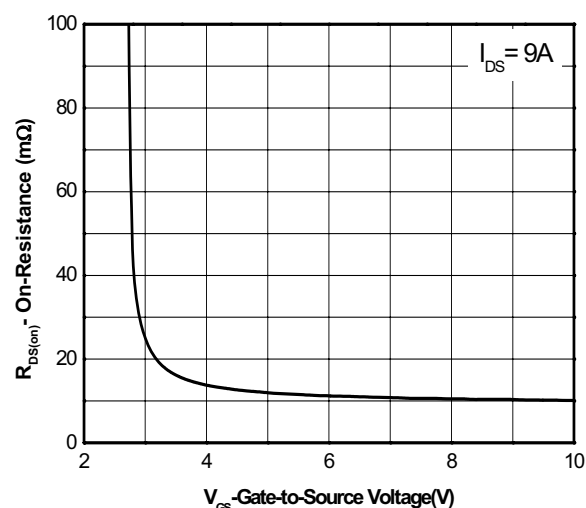
Output characteristics



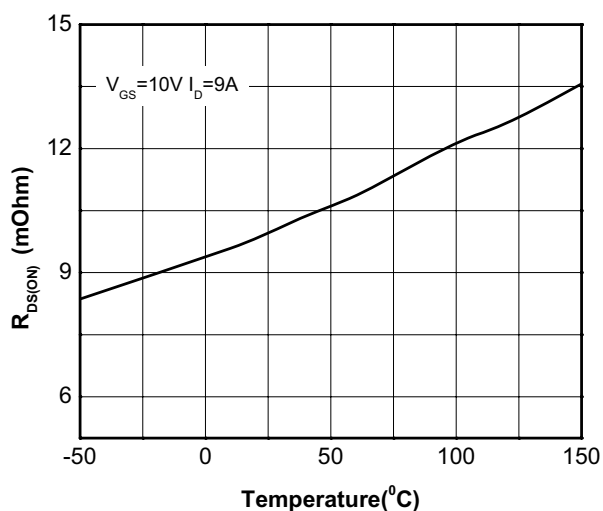
Transfer characteristics



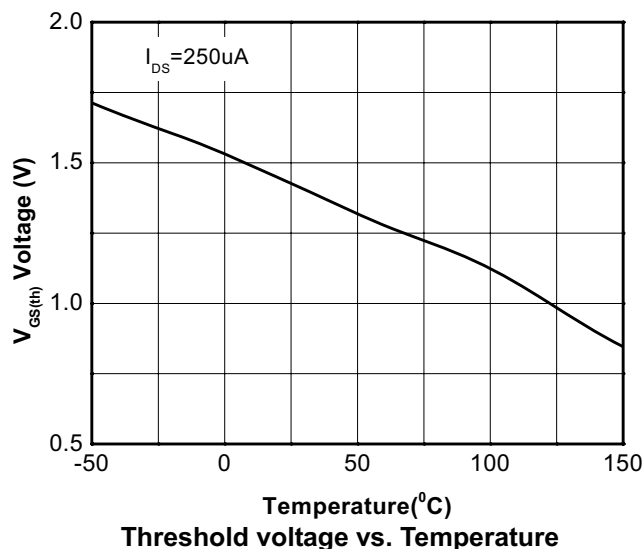
On-Resistance vs. Drain current



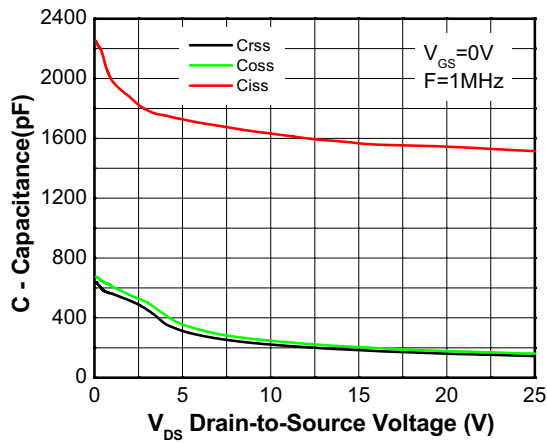
On-Resistance vs. Gate-to-Source voltage



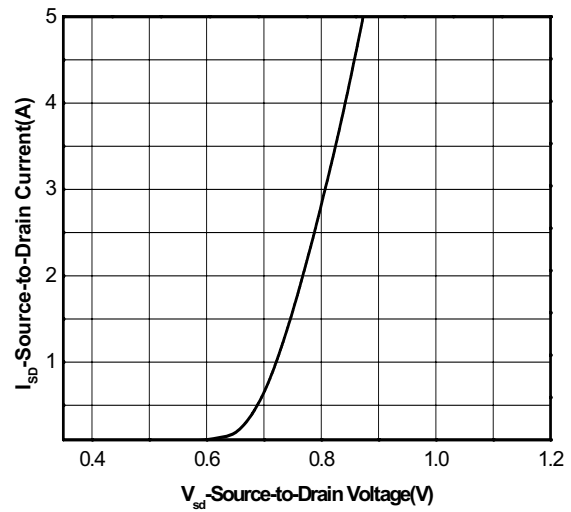
On-Resistance vs. Junction temperature



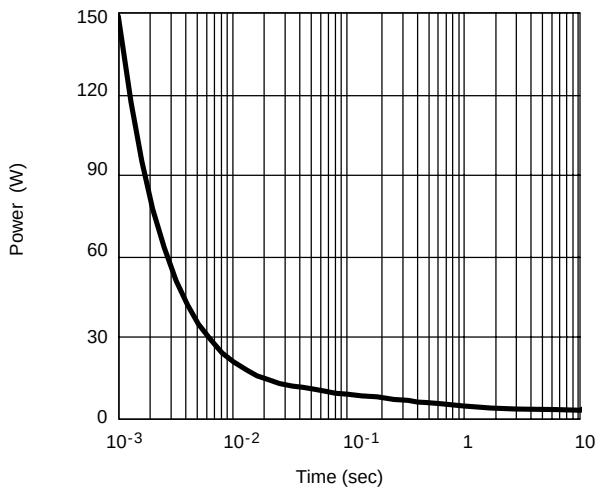
Threshold voltage vs. Temperature



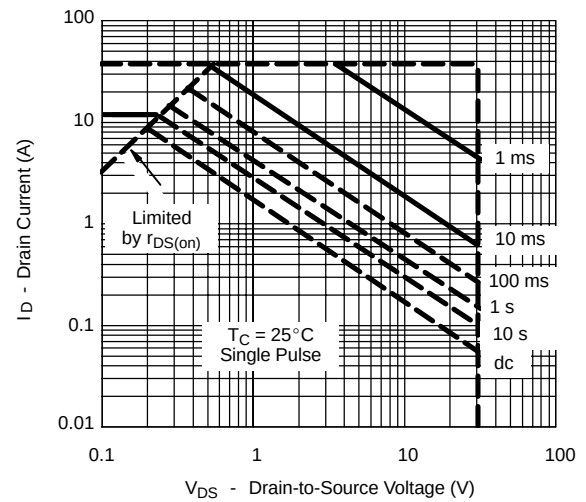
Capacitance



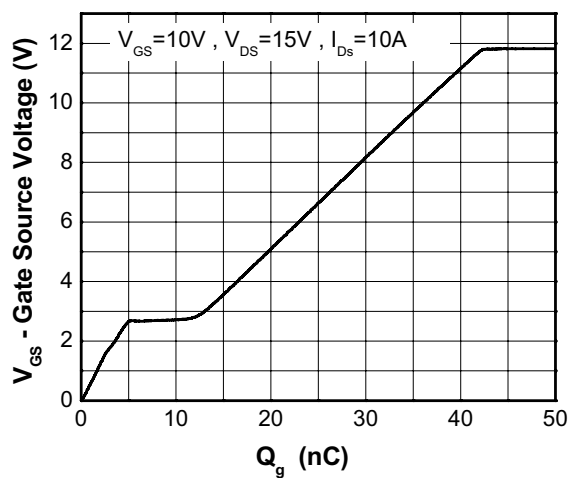
Body diode forward voltage



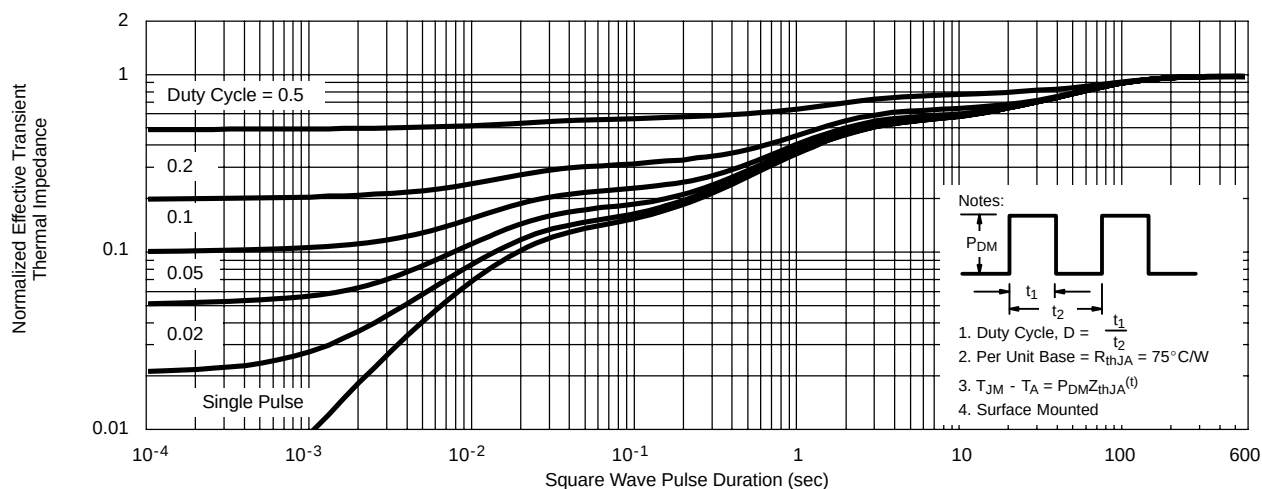
Single pulse power



Safe operating power



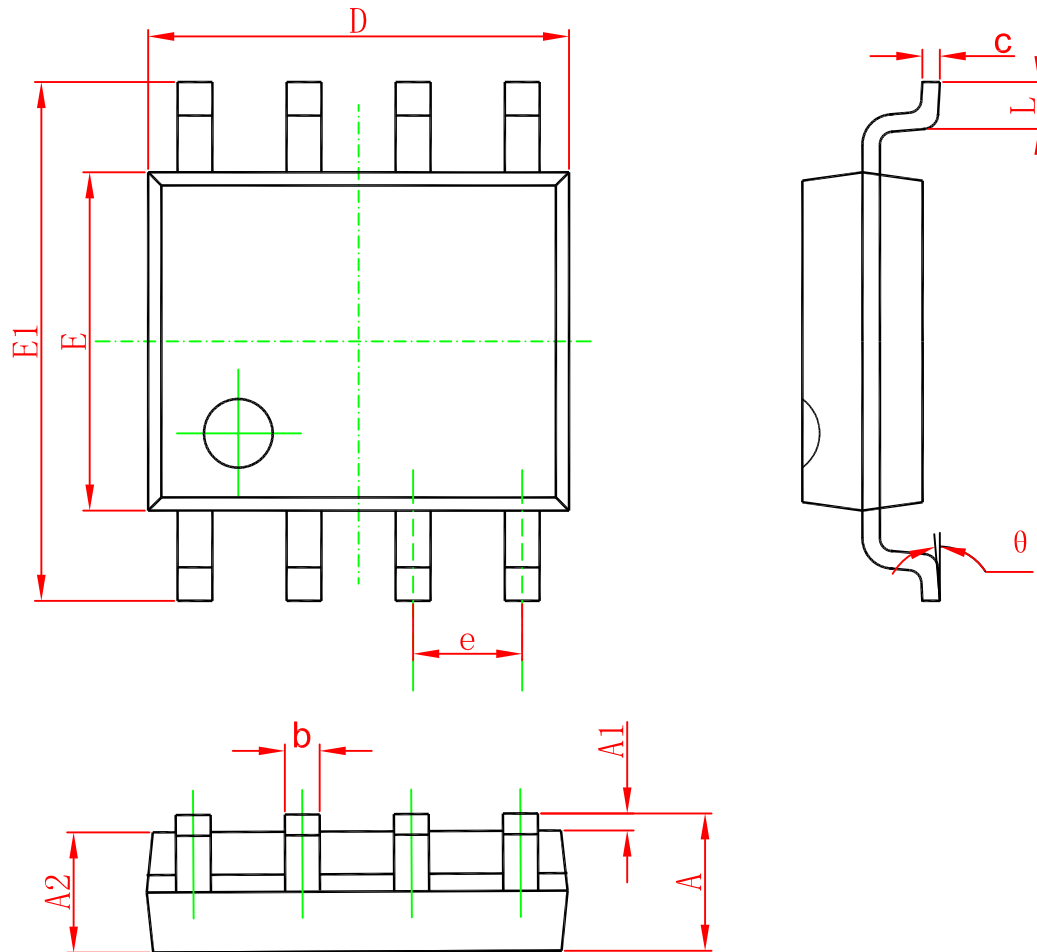
Gate Charge Characteristics



Transient thermal response (Junction-to-Ambient)

Package outline dimensions

SOP-8L



Symbol	Dimensions in millimeter		
	Min.	Typ.	Max.
A	1.350	1.550	1.750
A1	0.100	0.175	0.250
A2	1.350	1.450	1.550
b	0.330	0.420	0.510
c	0.170	0.210	0.250
D	4.700	4.900	5.100
E	3.800	3.900	4.000
E1	5.800	6.000	6.200
e	1.270(BSC)		
L	0.400	0.835	1.270
θ	0°		8°