

$V_{DS} = 30V$

$R_{DS(ON)}, V_{GS} @ 10V, I_{ds} @ 8.5A = 38m\Omega$

$R_{DS(ON)}, V_{GS} @ 4.5V, I_{ds} @ 5A = 52m\Omega$

Features

Advanced trench process technology
High Density Cell Design For Ultra Low On-Resistance
High Power and Current Handling Capability

Pb-Free package is available

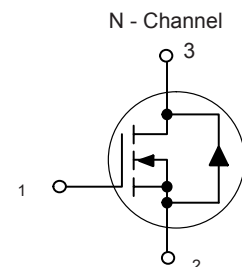
RoHS product for packing code suffix "G"

Halogen free product for packing code suffix "H"

▼ Simple Drive Requirement

▼ Small Package Outline

▼ Surface Mount Device



Ordering Information

Device	Marking	Shipping
SE4812LT1	N48	3000/Tape&Reel

Maximum Ratings and Thermal Characteristics ($T_A = 25^\circ C$ unless otherwise noted)

Symbol	Parameter	Limit	Unit	
V_{DS}	Drain-Source Voltage	30	V	
V_{GS}	Gate-Source Voltage	± 20		
I_D	Continuous Drain Current	6.9	A	
I_{DM}	Pulsed Drain Current ¹⁾	30		
P_D	Maximum Power Dissipation	$T_A = 25^\circ C$	2	W
		$T_A = 75^\circ C$	1.44	
T_J, T_{stg}	Operating Junction and Storage Temperature Range	-55 to 150	$^\circ C$	
$R_{\theta JC}$	Junction-to-Case Thermal Resistance	24	$^\circ C/W$	
$R_{\theta JA}$	Junction-to-Ambient Thermal Resistance (PCB mounted) ²⁾	62.5		

Note: 1. Repetitive Rating: Pulse width limited by the maximum junction temperature

2. 1-in² 2oz Cu PCB board

3. Guaranteed by design; not subject to production testing



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30V N-Channel Enhancement-Mode MOSFET

SE4812LT1

ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Test Condition	Min	Typ	Max	Unit
Static						
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS} = 0V, I_D = 250\mu A$	30			V
$R_{DS(on)}$	Drain-Source On-State Resistance	$V_{GS} = 4.5V, I_D = 5A$		35.0	52.0	m Ω
$R_{DS(on)}$	Drain-Source On-State Resistance	$V_{GS} = 10V, I_D = 8.5A$		22.0	38.0	
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS} = V_{GS}, I_D = 250\mu A$	1	1.5	3	V
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS} = 24V, V_{GS} = 0V$			1	μA
I_{GSS}	Gate Body Leakage	$V_{GS} = \pm 20V, V_{DS} = 0V$			± 100	nA
g_{fs}	Forward Transconductance	$V_{DS} = 5V, I_D = 6.9A$		15.4		S
Dynamic³⁾						
Q_g	Total Gate Charge	$V_{DS} = 15V, I_D = 8.5A$ $V_{GS} = 10V$		13	20	nC
Q_{gs}	Gate-Source Charge			4.2		
Q_{gd}	Gate-Drain Charge			3.1		
$t_{d(on)}$	Turn-On Delay Time	$V_{DD} = 15V, R_L = 15\Omega$ $I_D = 1A, V_{GEN} = 10V$ $R_G = 6\Omega$		9		ns
t_r	Turn-On Rise Time			14		
$t_{d(off)}$	Turn-Off Delay Time			30		
t_f	Turn-Off Fall Time			5		
C_{iss}	Input Capacitance	$V_{DS} = 15V, V_{GS} = 0V$ $f = 1.0\text{ MHz}$		610		pF
C_{oss}	Output Capacitance			100		
C_{riss}	Reverse Transfer Capacitance			77		
Source-Drain Diode						
I_S	Max. Diode Forward Current				3	A
V_{SD}	Diode Forward Voltage	$I_S = 1A, V_{GS} = 0V$			1.3	V

Note: Pulse test: pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$



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SE4812LT1

TYPICAL ELECTRICAL CHARACTERISTICS

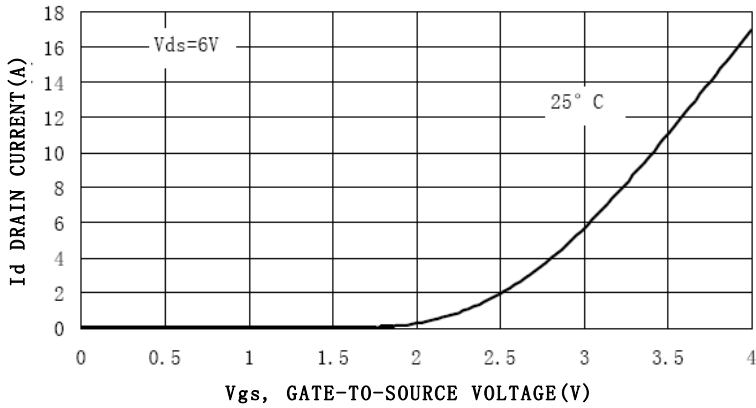


Figure 1. Transfer Characteristics

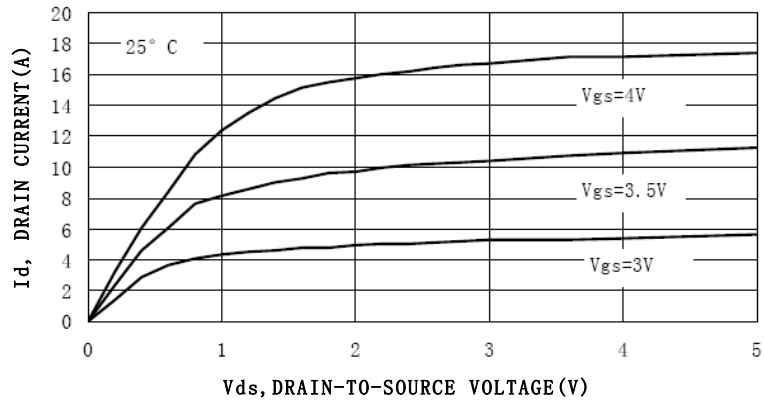


Figure 2. On-Region Characteristics

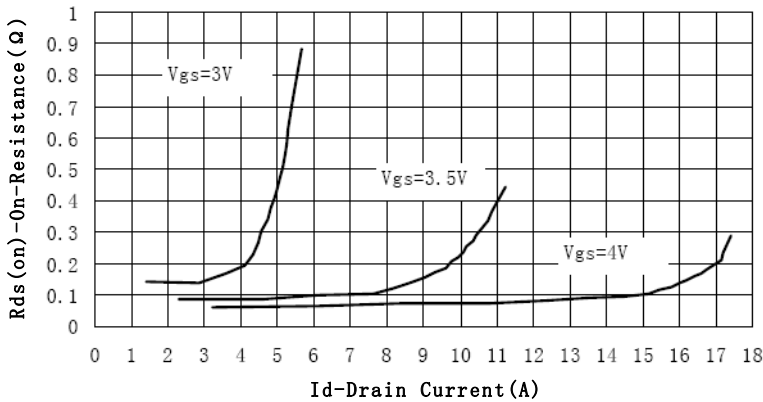


Figure 3. On-Resistance versus Drain Current

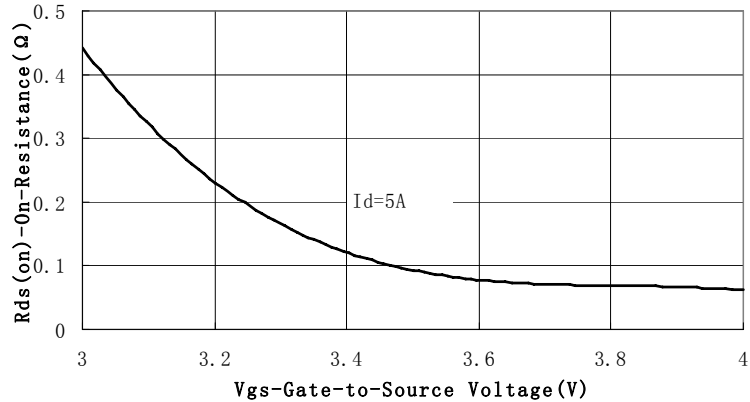
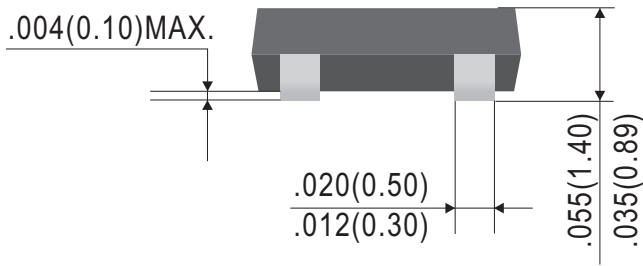
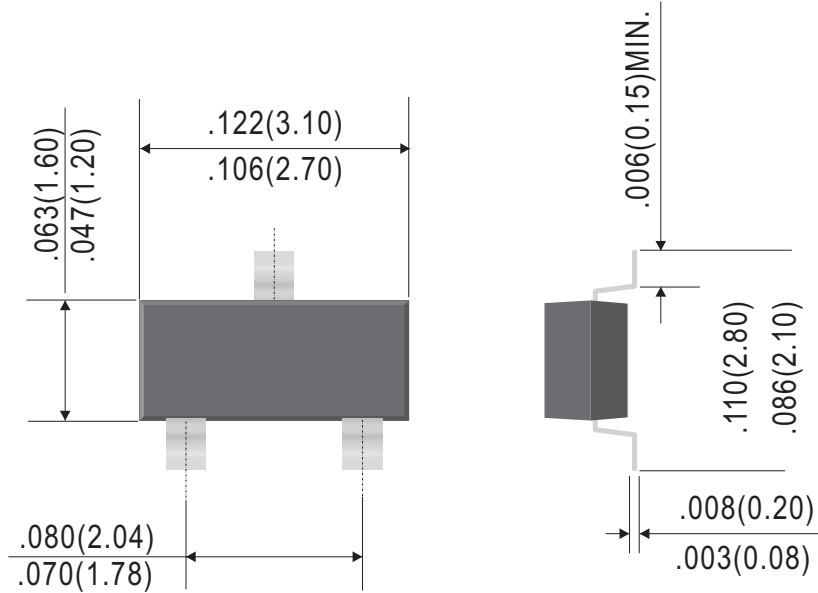


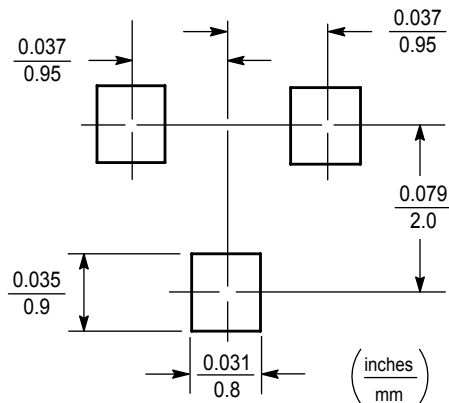
Figure 4. On-Resistance vs. Gate-to-Source Voltage

30V N-Channel Enhancement-Mode MOSFET

SOT-23



Dimensions in inches and (millimeters)



Ordering Information:

Device PN	Packing
SE4812LT1G ⁽¹⁾ -WS	Tape&Reel: 3 Kpcs/Reel

Note: (1) RoHS product for packing code suffix "G" ; Halogen free product for packing code suffix "H"

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