

GSM2354

100V N-Channel Enhancement Mode MOSFET

Product Description

GSM2354, N-Channel enhancement mode MOSFET, uses Advanced Trench Technology to provide excellent $R_{DS(ON)}$, low gate charge.

These devices are particularly suited for low voltage power management, such as smart phone and notebook computer and other battery powered circuits, and low in-line power loss are needed in commercial industrial surface mount applications.

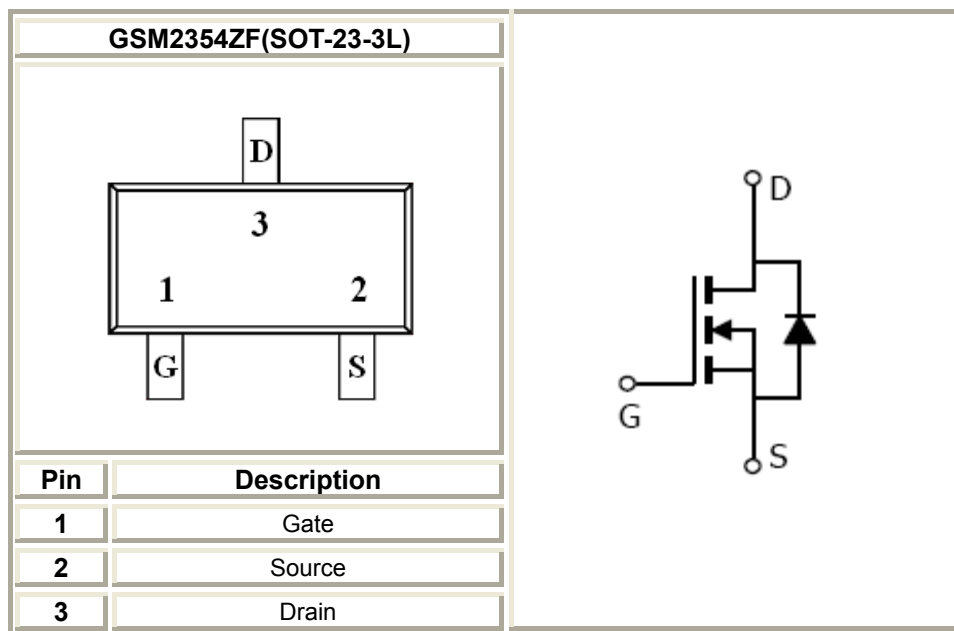
Features

- 100V/3.2A, $R_{DS(ON)}=145m\Omega@V_{GS}=10V$
- 100V/2.6A, $R_{DS(ON)}=160m\Omega@V_{GS}=4.5V$
- Super high density cell design for extremely low $R_{DS(ON)}$
- Exceptional on-resistance and maximum DC current capability
- SOT-23-3L package design

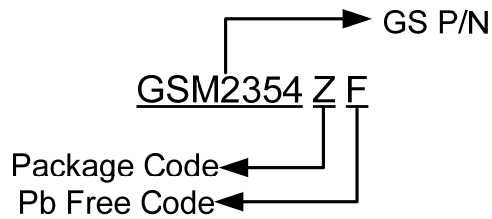
Applications

- DC/DC Converters
- Load Switch
- LED Backlighting in LCD TVs

Packages & Pin Assignments

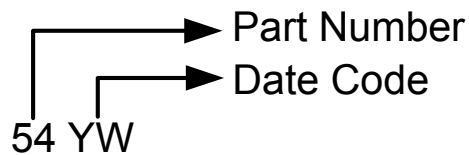


Ordering Information



Part Number	Package	Quantity Reel
GSM2354ZF	SOT-23-3L	3000 PCS

Marking Information



Absolute Maximum Ratings

(T_A=25°C unless otherwise noted)

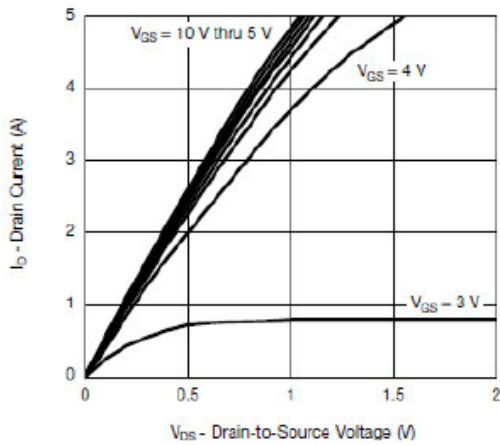
Symbol	Parameter	Typical	Unit
V _{DSS}	Drain-Source Voltage	100	V
V _{GSS}	Gate -Source Voltage	±20	V
I _D	Continuous Drain Current(T _J =150°C)	T _A =25°C	3.2
		T _A =70°C	2.6
I _{DM}	Pulsed Drain Current	10	A
I _S	Continuous Source Current(Diode Conduction)	1.6	A
P _D	Power Dissipation	T _A =25°C	1.25
		T _A =70°C	0.8
T _J	Operating Junction Temperature	150	°C
T _{STG}	Storage Temperature Range	-55/150	°C
R _{θJA}	Thermal Resistance-Junction to Ambient	120	°C/ W

Electrical Characteristics

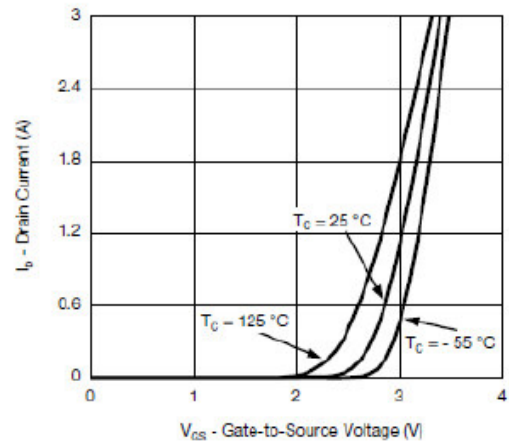
($T_A=25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
Static						
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=250\mu A$	100			V
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=250\mu A$	0.8		2.5	V
I_{GSS}	Gate Leakage Current	$V_{DS}=0V, V_{GS}=\pm 20V$			± 100	nA
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS}=80V, V_{GS}=0V$			5	uA
		$V_{DS}=80V, V_{GS}=0V$ $T_J=85^\circ\text{C}$			10	
$I_{D(on)}$	On-State Drain Current	$V_{DS} \geq 5V, V_{GS}=4.5V$	5			A
$R_{DS(on)}$	Drain-Source On-Resistance	$V_{GS}=10V, I_D=3.2A$		120	145	m Ω
		$V_{GS}=4.5V, I_D=2.6A$		130	160	
g_{FS}	Forward Transconductance	$V_{DS}=20V, I_D=1.5A$		2		S
V_{SD}	Diode Forward Voltage	$I_S=1.6A, V_{GS}=0V$		0.85	1.2	V
Dynamic						
Q_g	Total Gate Charge	$V_{DS}=50V, V_{GS}=4.5V,$ $I_D=1.6A$		5	10	nC
Q_{gs}	Gate-Source Charge			1.5		
Q_{gd}	Gate-Drain Charge			2.5		
C_{iss}	Input Capacitance	$V_{DS}=50V, V_{GS}=0V,$ $f=1\text{MHz}$		450		pF
C_{oss}	Output Capacitance			50		
C_{rss}	Reverse Transfer Capacitance			25		
$t_{d(on)}$	Turn-On Time	$V_{DD}=50V, R_L=39\Omega,$ $I_D=1.3A, V_{GEN}=4.5V,$ $R_G=1\Omega$		45	60	ns
t_r				35	55	
$t_{d(off)}$	Turn-Off Time			25	40	
t_f				20	35	

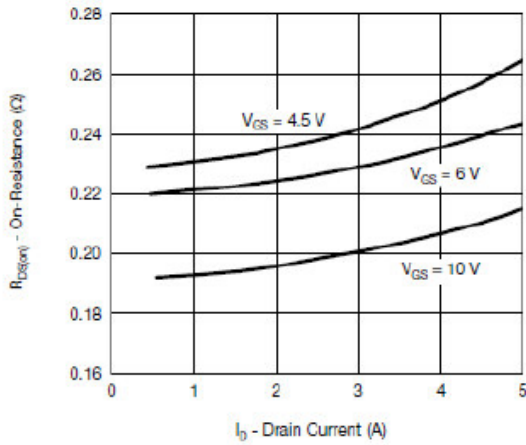
Typical Performance Characteristics



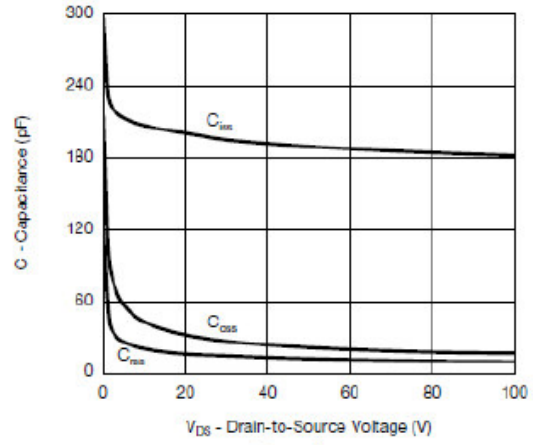
Output Characteristics



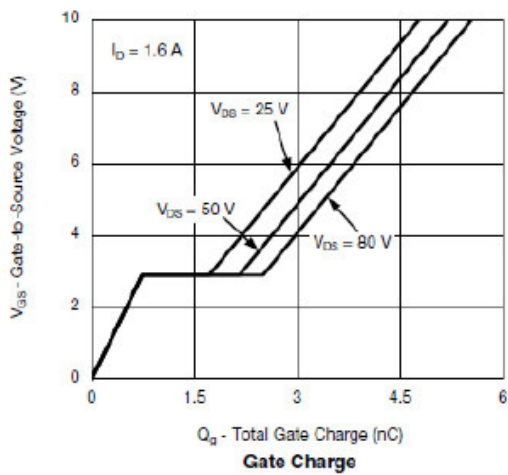
Transfer Characteristics



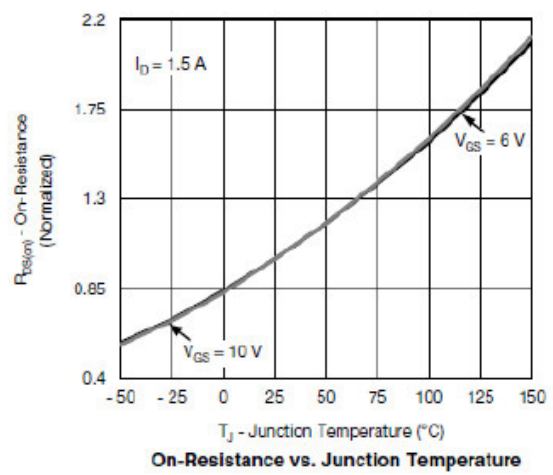
On-Resistance vs. Drain Current and Gate Voltage



Capacitance

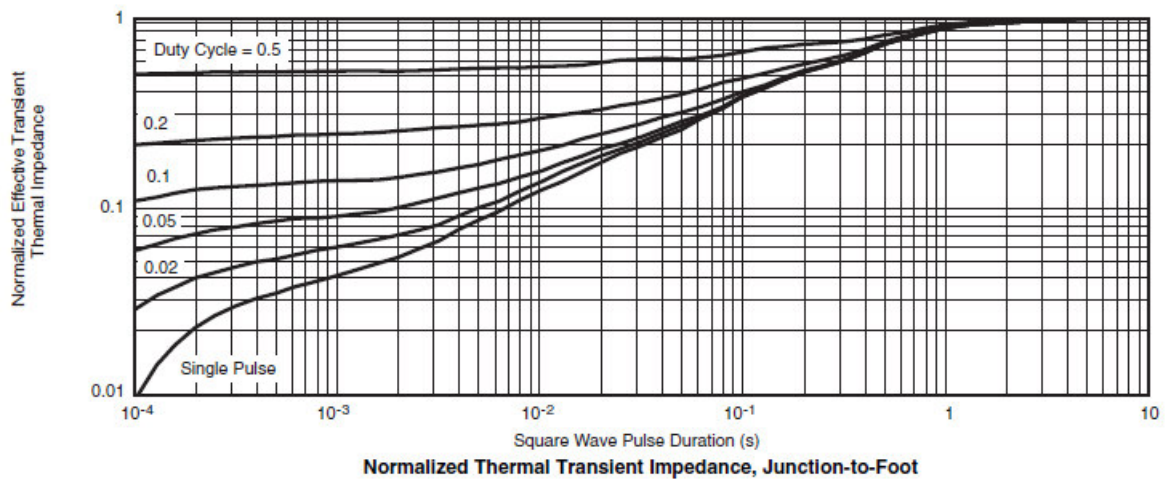
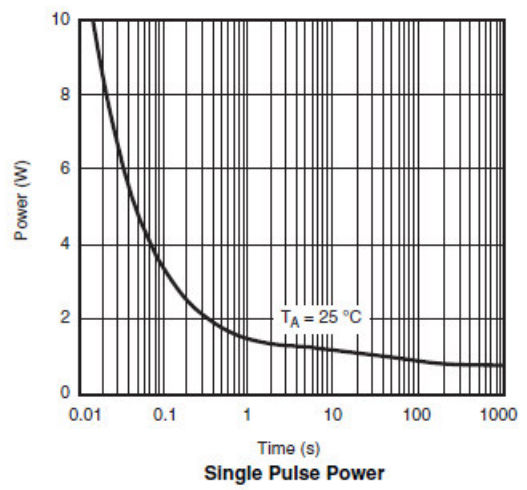
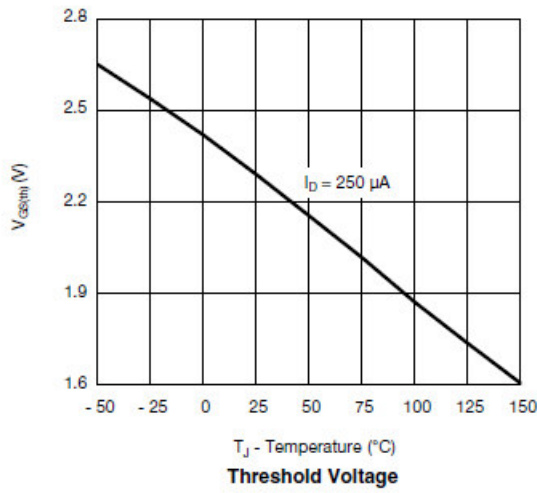
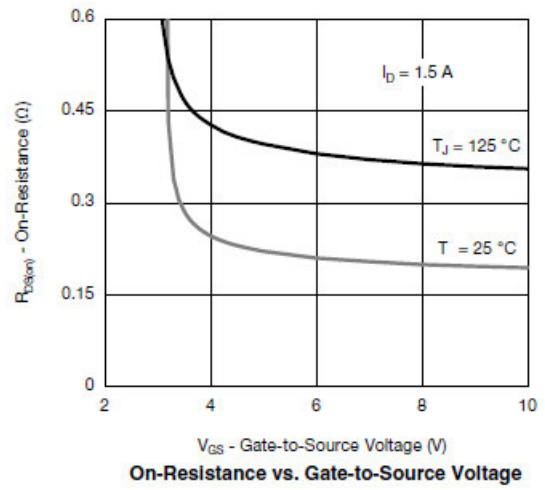
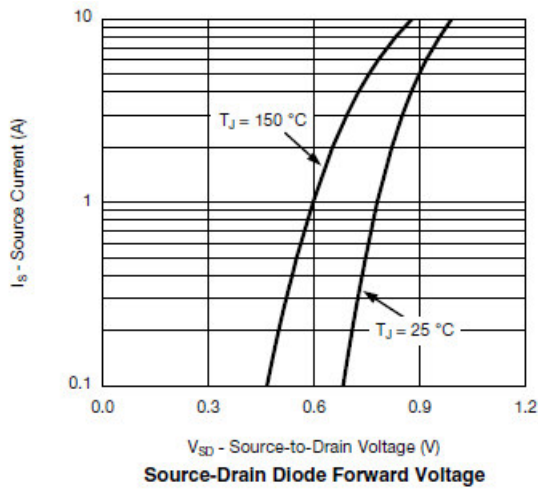


Gate Charge



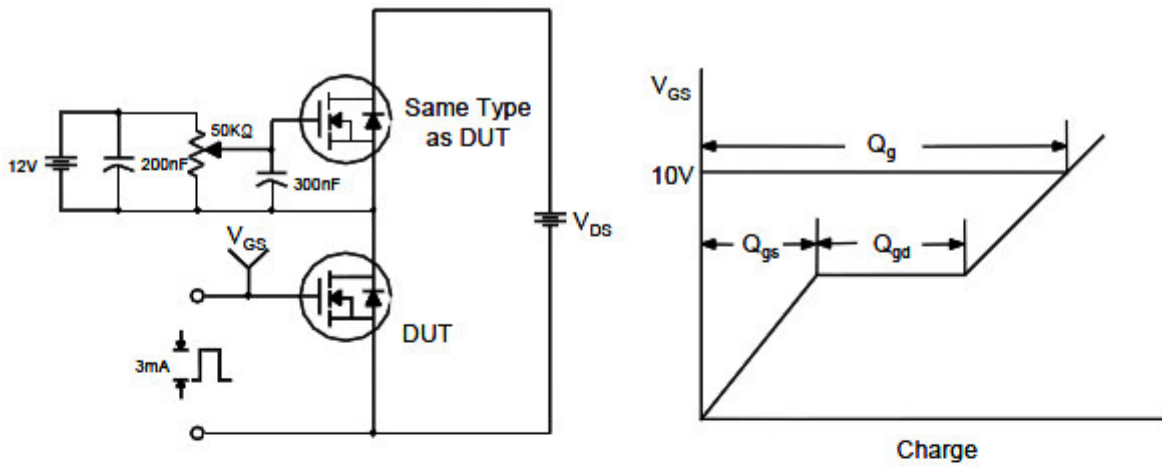
On-Resistance vs. Junction Temperature

Typical Performance Characteristics (continue)

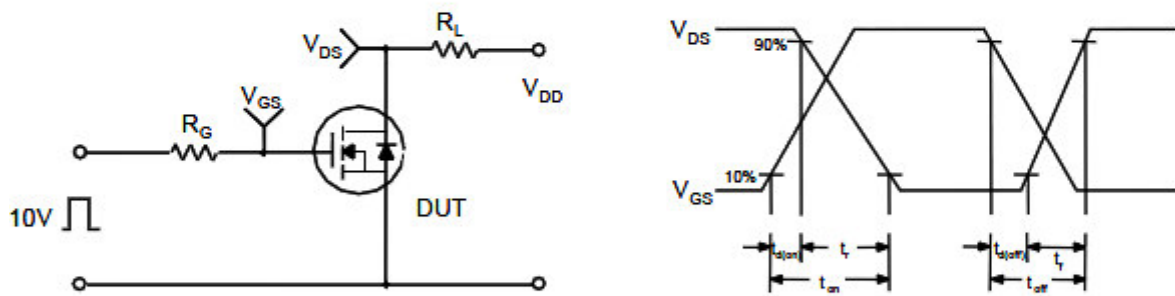


Typical Performance Characteristics (continue)

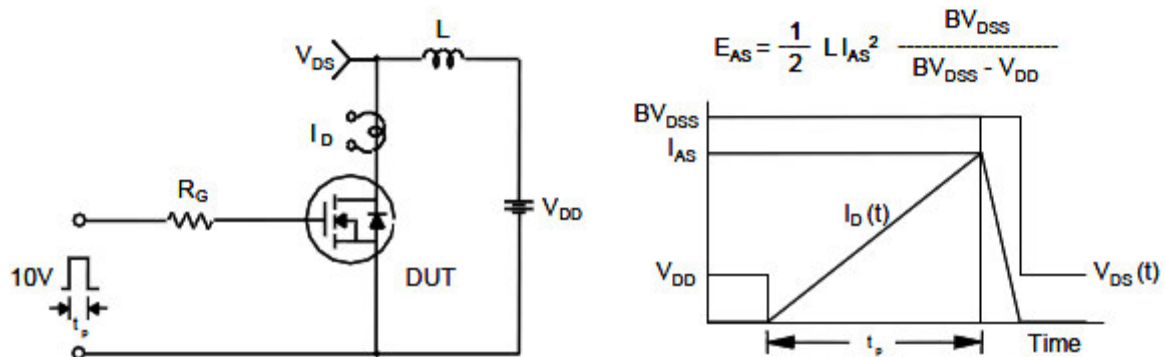
Gate Charge Test Circuit & Waveform



Resistive Switching Test Circuit & Waveforms

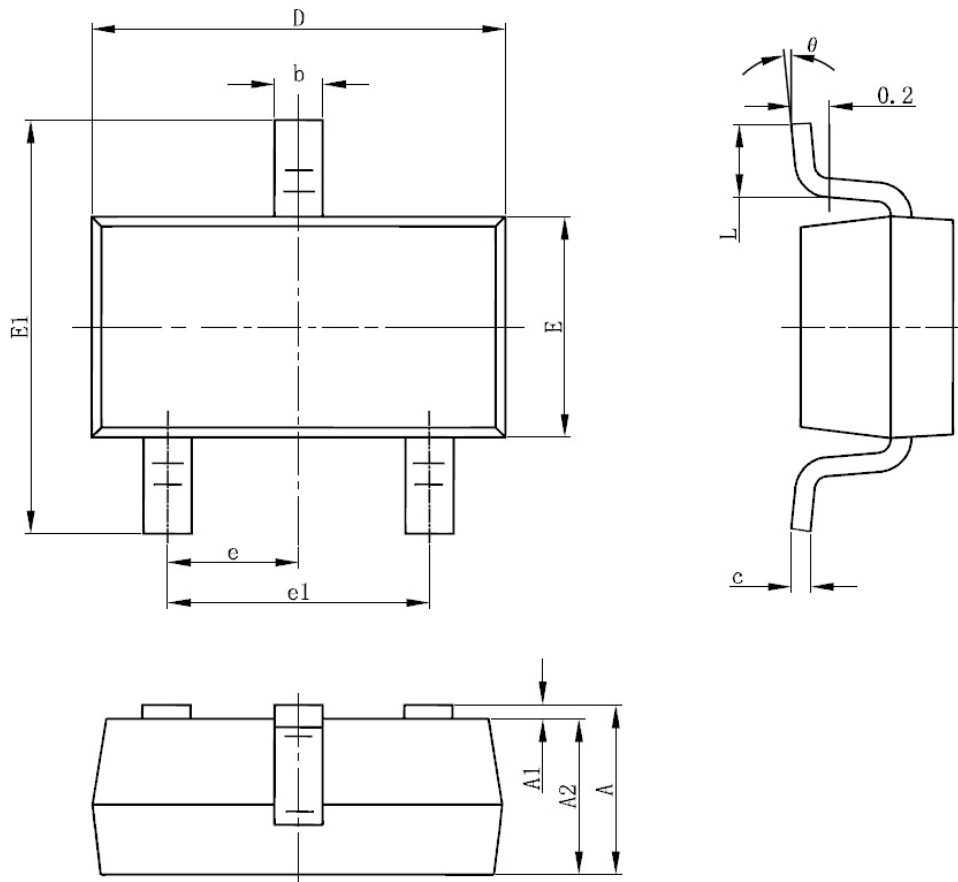


Unclamped Inductive Switching Test Circuit & Waveforms



Package Dimension

SOT-23-3L










Dimensions				
SYMBOL	Millimeters		Inches	
	MIN	MAX	MIN	MAX
A	1.05	1.25	0.041	0.049
A1	0	0.1	0	0.004
A2	1.05	1.15	0.041	0.045
b	0.3	0.4	0.012	0.016
c	0.1	0.2	0.004	0.008
D	2.82	3.02	0.111	0.119
E	1.5	1.7	0.059	0.067
E1	2.65	2.95	0.104	0.116
e	0.950 (TYP)		0.037 (TYP)	
e1	1.8	2	0.071	0.079
L	0.700 REF		0.028 REF	
L1	0.3	0.6	0.012	0.024
θ	0°	8°	0°	8°



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