

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.

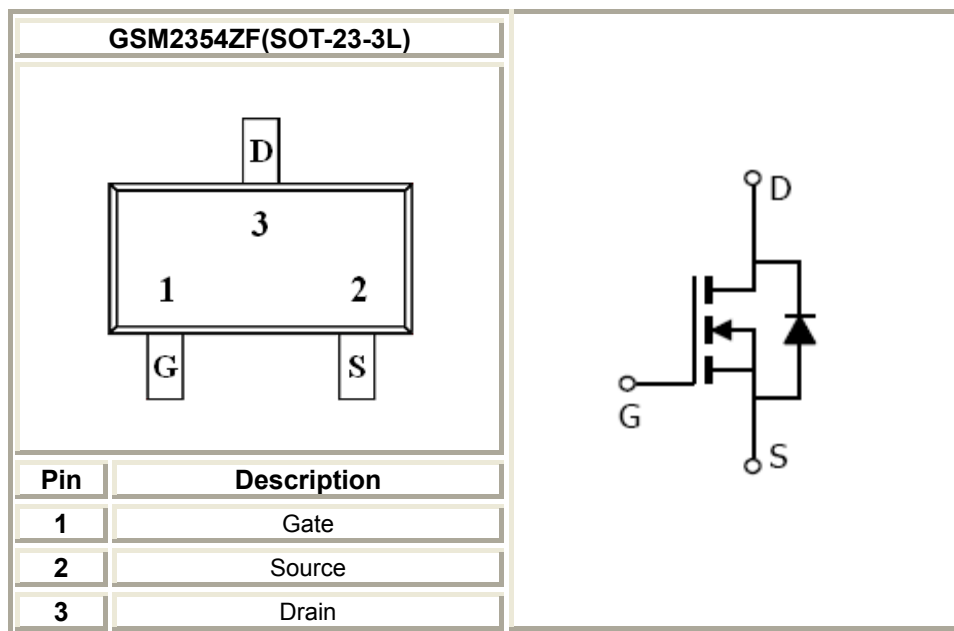
Features

- 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

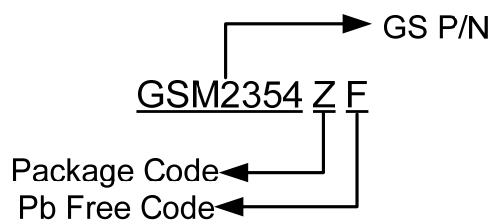
Applications

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

Packages & Pin Assignments

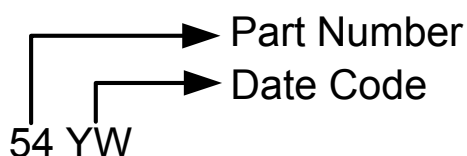


Ordering Information



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

Marking Information



Absolute Maximum Ratings

(T_A=25°C unless otherwise noted)

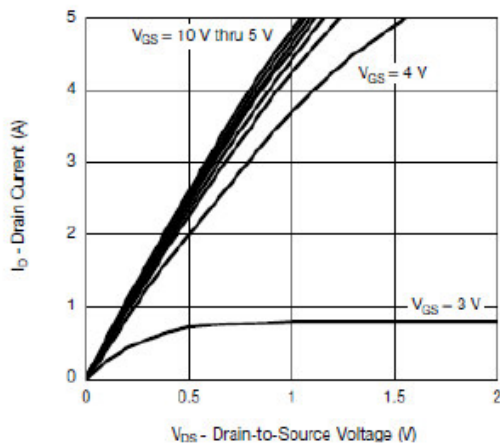
Symbol	Parameter		Typical	Unit
V _{DSS}	Drain-Source Voltage		100	V
V _{GSS}	Gate –Source Voltage		±20	V
I _D	Continuous Drain Current(T _J =150℃)	T _A =25℃	3.2	A
		T _A =70℃	2.6	
I _{DM}	Pulsed Drain Current		10	A
I _S	Continuous Source Current(Diode Conduction)		1.6	A
P _D	Power Dissipation	T _A =25℃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

Electrical Characteristics

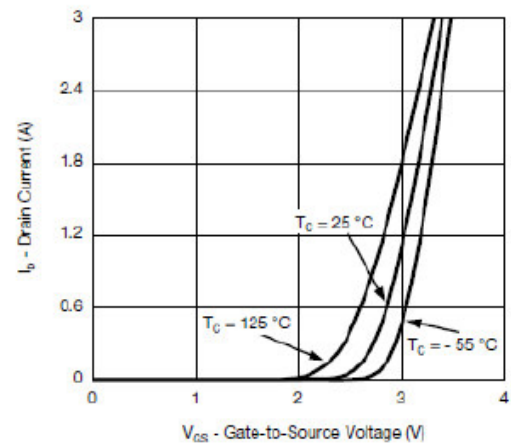
(T_A=25°C unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
Static						
V _{(BR)DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V,I _D =250uA	100			V
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} ,I _D =250uA	0.8		2.5	
I _{GSS}	Gate Leakage Current	V _{DS} =0V,V _{GS} =±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℃			10	
I _{D(on)}	On-State Drain Current	V _{DS} ≥5V,V _{GS} =4.5V	5			A
R _{DS(on)}	Drain-Source On-Resistance	V _{GS} =10V,I _D =3.2A		120	145	mΩ
		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=1MHz		450		pF
C _{oss}	Output Capacitance			50		
C _{rss}	Reverse Transfer Capacitance			25		
t _{d(on)}	Turn-On Time	V _{DD} =50V,R _L =39Ω, I _D =1.3A,V _{GEN} =4.5V, R _G =1Ω		45	60	ns
t _r				35	55	
t _{d(off)}	Turn-Off Time			25	40	
t _f				20	35	

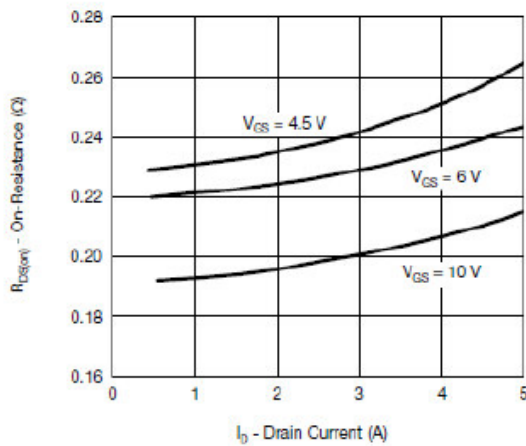
Typical Performance Characteristics



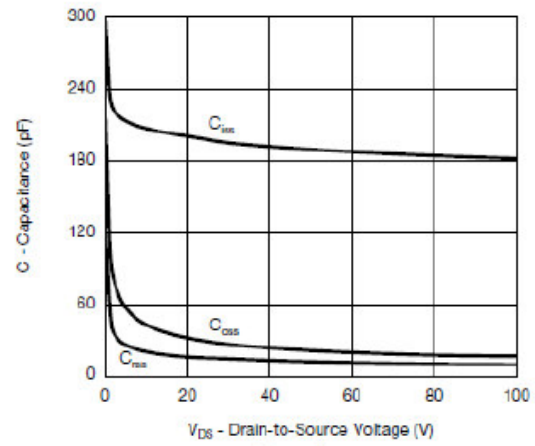
Output Characteristics



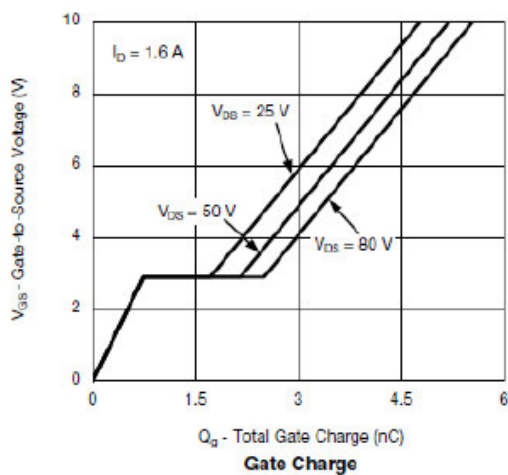
Transfer Characteristics



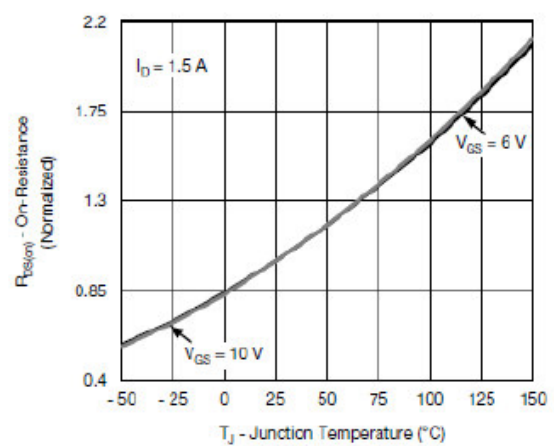
On-Resistance vs. Drain Current and Gate Voltage



Capacitance

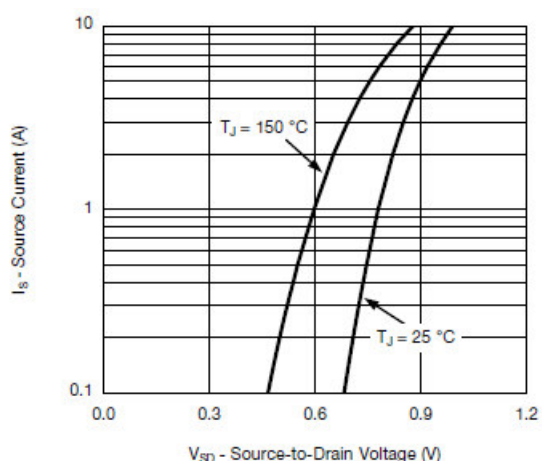


Gate Charge

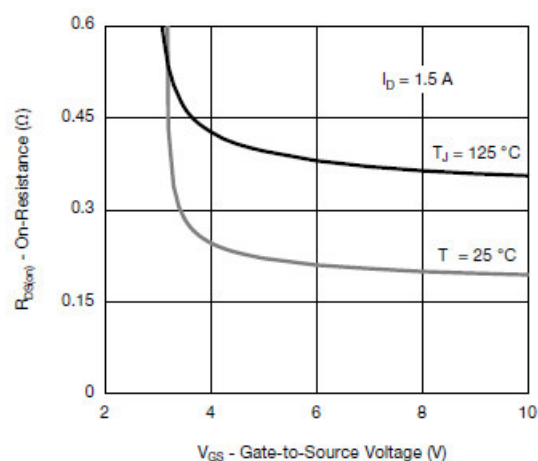


On-Resistance vs. Junction Temperature

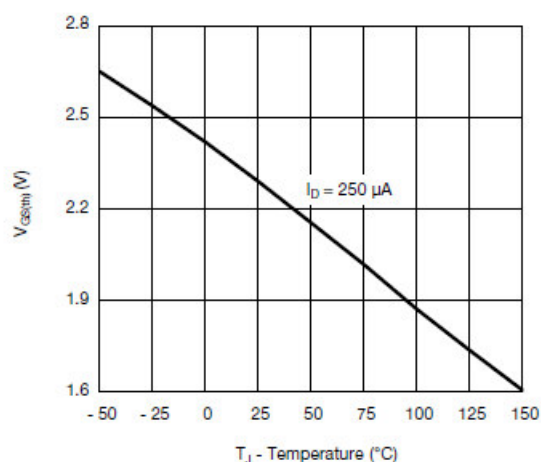
Typical Performance Characteristics (continue)



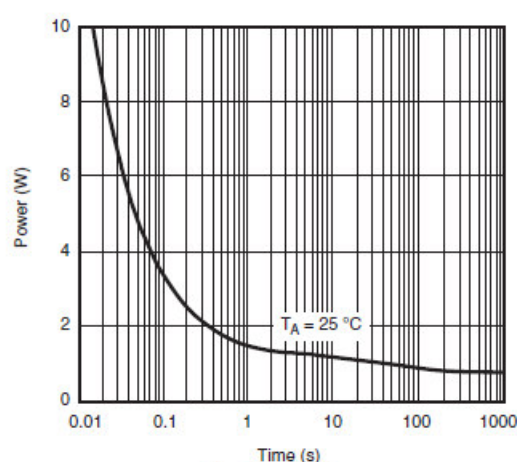
Source-Drain Diode Forward Voltage



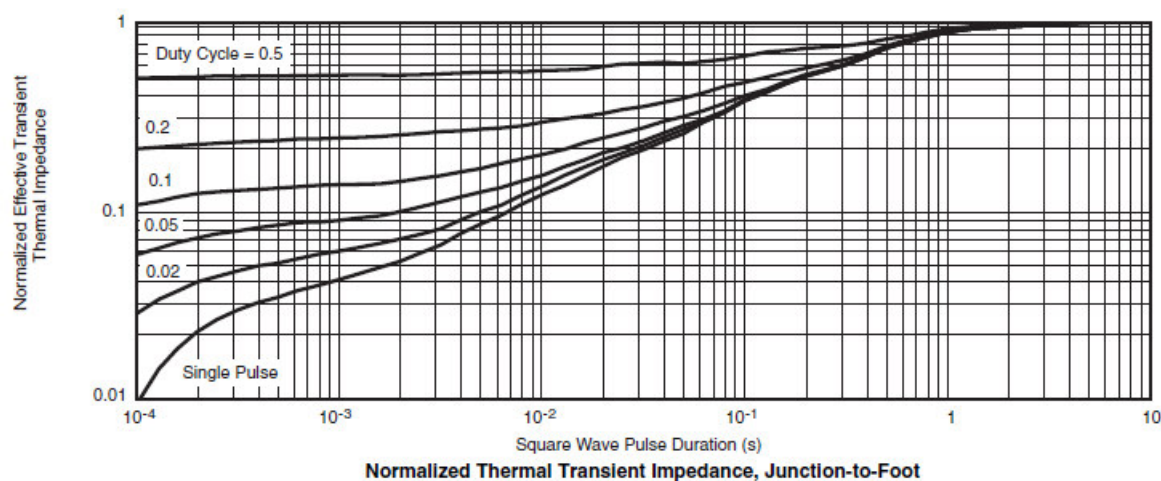
On-Resistance vs. Gate-to-Source Voltage



Threshold Voltage



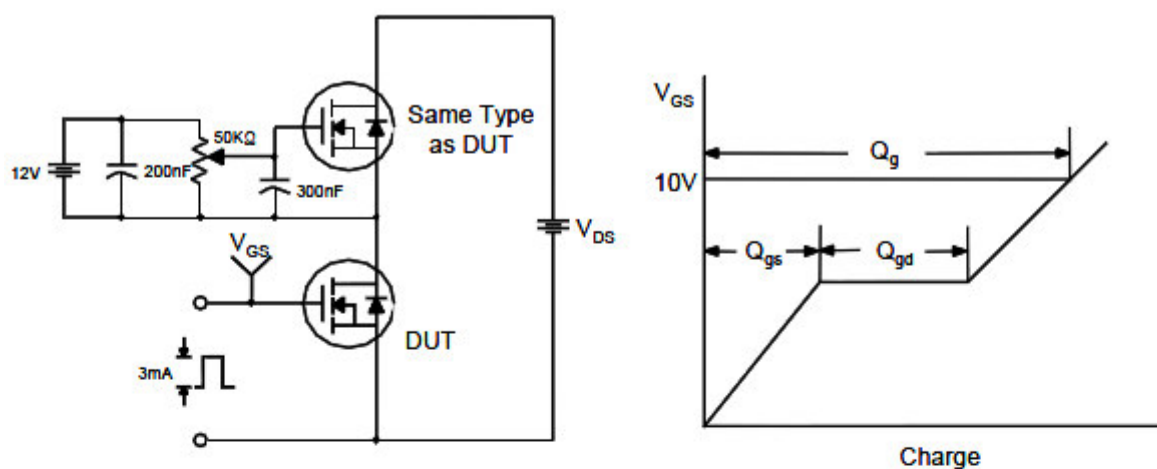
Single Pulse Power



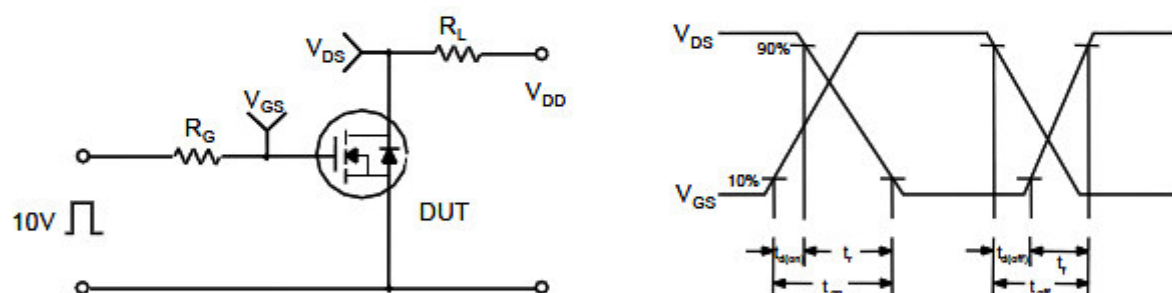
Normalized Thermal Transient Impedance, Junction-to-Foot

Typical Performance Characteristics (continue)

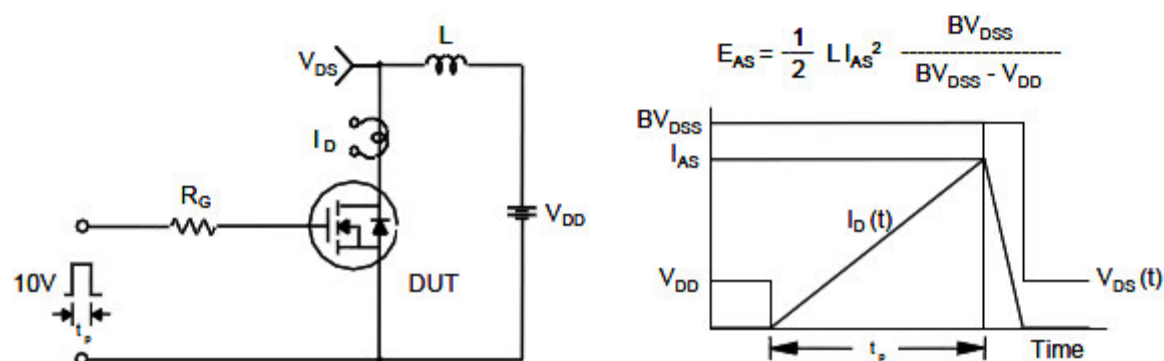
Gate Charge Test Circuit & Waveform



Resistive Switching Test Circuit & Waveforms

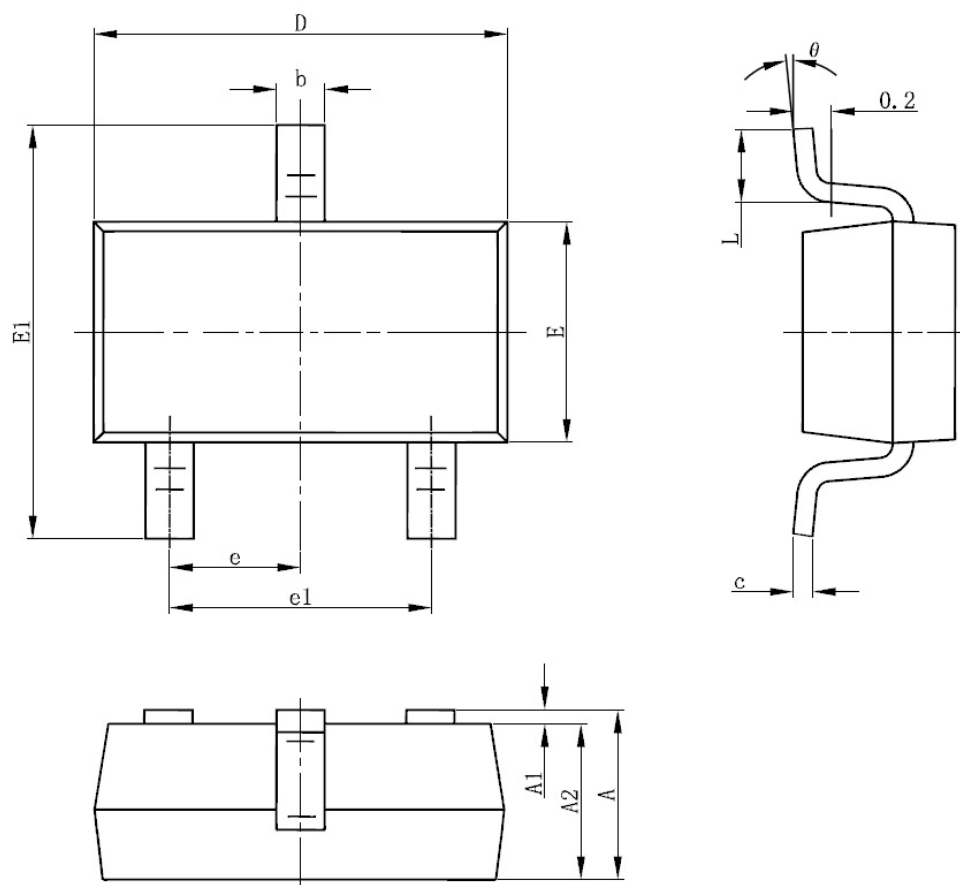


Unclamped Inductive Switching Test Circuit & Waveforms



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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