

GSM3424A

30V N-Channel Enhancement Mode MOSFET

Product Description

GSM3424A, 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.

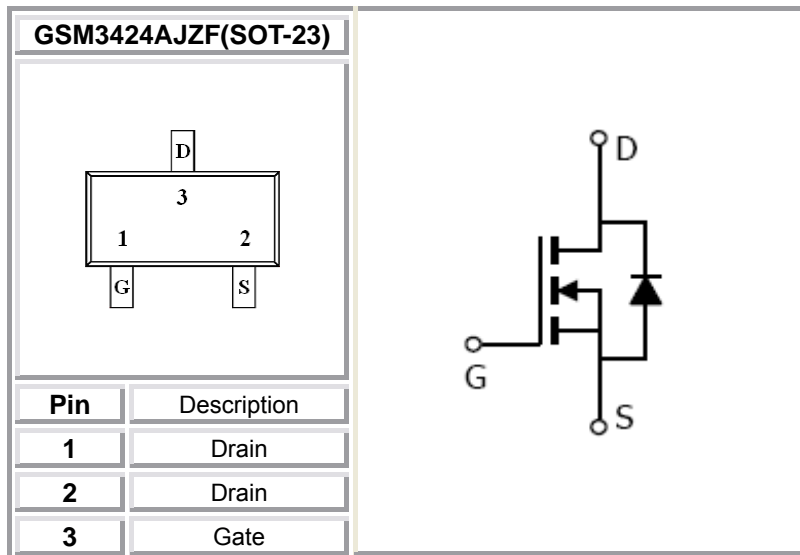
Features

- 30V/2.4A, $R_{DS(ON)}=85m\Omega@V_{GS}=10V$
- 30V/2.0A, $R_{DS(ON)}=95m\Omega@V_{GS}=4.5V$
- 30V/1.5A, $R_{DS(ON)}=265m\Omega@V_{GS}=4.5V$
- Super high density cell design for extremely low $R_{DS(ON)}$
- Exceptional on-resistance and maximum DC current capability
- SOT-23 package design

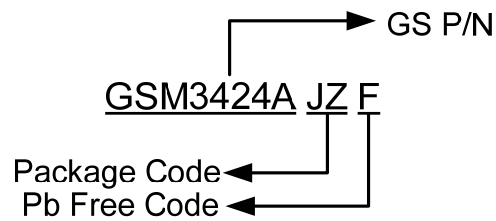
Applications

- Portable Equipment
- Battery Powered System
- Net Working System

Packages & Pin Assignments

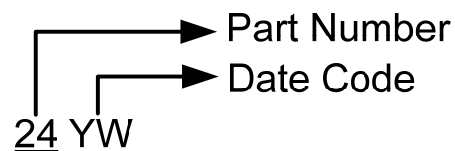


Ordering Information



Part Number	Package	Quantity Reel
GSM3424AJZF	SOT-23	3000 PCS

Marking Information



Absolute Maximum Ratings

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

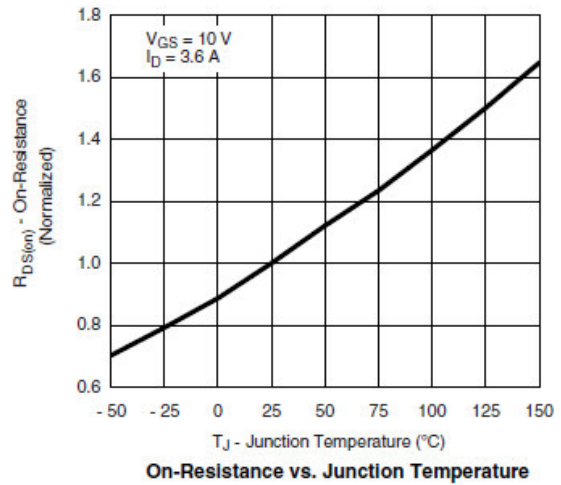
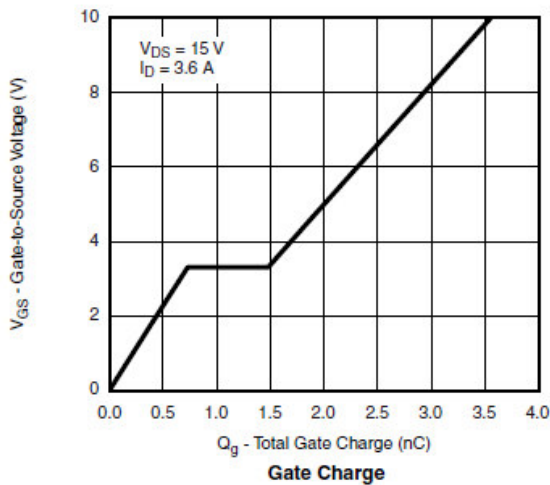
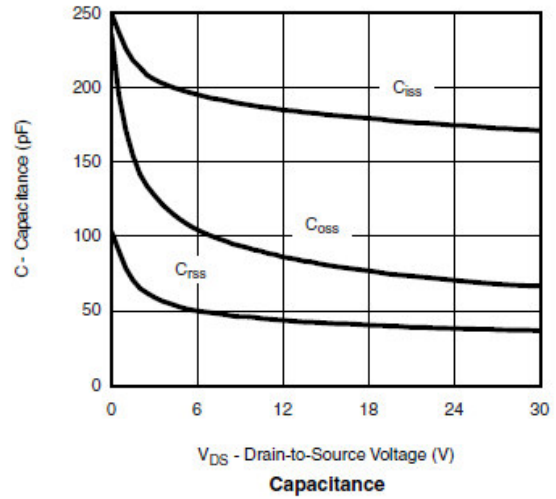
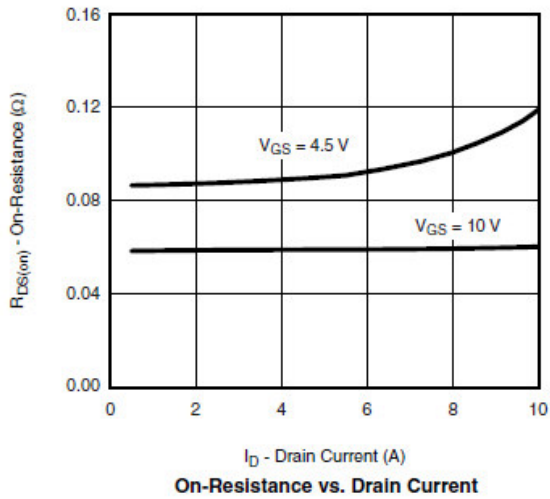
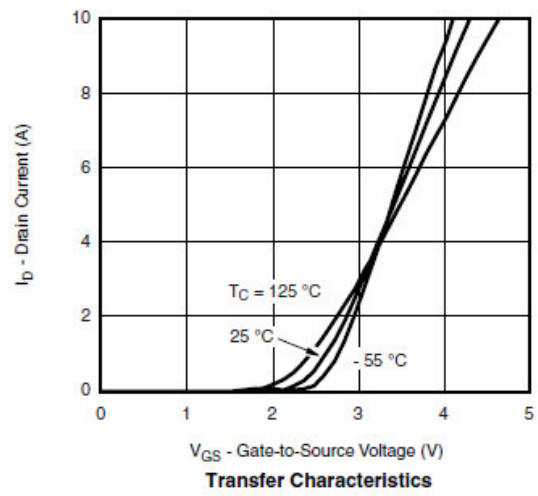
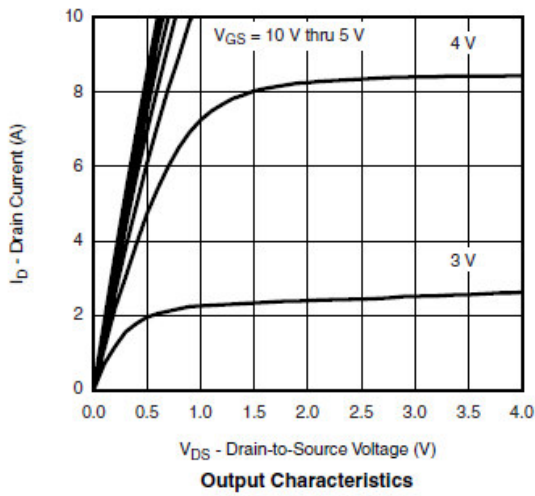
Symbol	Parameter	Typical	Unit
V_{DSS}	Drain-Source Voltage	30	V
V_{GSS}	Gate –Source Voltage	± 20	V
I_D	Continuous Drain Current($T_J=150^{\circ}\text{C}$)	$T_A=25^{\circ}\text{C}$	3.6
		$T_A=70^{\circ}\text{C}$	2.0
I_{DM}	Pulsed Drain Current	10	A
I_S	Continuous Source Current(Diode Conduction)	1.6	A
P_D	Power Dissipation	$T_A=25^{\circ}\text{C}$	1.25
		$T_A=70^{\circ}\text{C}$	10.8
T_J	Operating Junction Temperature	150	$^{\circ}\text{C}$
T_{STG}	Storage Temperature Range	-55/150	$^{\circ}\text{C}$
$R_{\theta JA}$	Thermal Resistance-Junction to Ambient	120	$^{\circ}\text{C}/\text{W}$

Electrical Characteristics

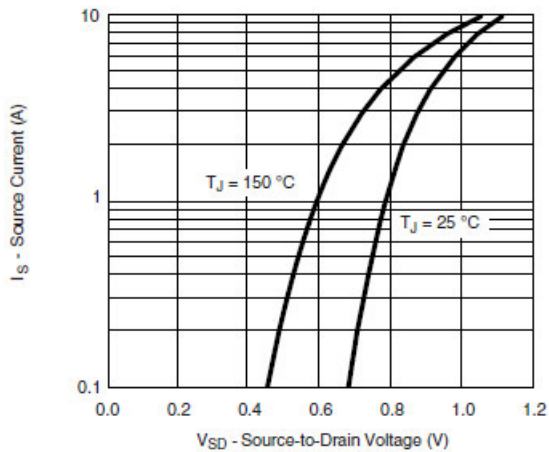
($T_A=25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
Static						
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=250\mu A$	30			V
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=250\mu A$	0.5		1.5	
I_{GSS}	Gate Leakage Current	$V_{DS}=0V, V_{GS}=\pm 20V$			± 100	nA
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS}=16V, V_{GS}=0V$			1	uA
		$V_{DS}=16V, V_{GS}=0V$ $T_J=85^\circ\text{C}$			30	
$I_{D(on)}$	On-State Drain Current	$V_{DS} \geq 5V, V_{GS}=4.5V$	8			A
$R_{DS(on)}$	Drain-Source On-Resistance	$V_{GS} = 10V, I_D=2.4A$		72	85	m Ω
		$V_{GS} = 4.5V, I_D=2.0A$		82	95	
		$V_{GS} = 2.5V, I_D=1.5A$		242	265	
g_{FS}	Forward Transconductance	$V_{DS}=10V, I_D=6.1A$		20		S
V_{SD}	Diode Forward Voltage	$I_S=1.7A, V_{GS}=0V$		0.8	1.2	V
Dynamic						
Q_g	Total Gate Charge	$V_{DS}=15V, V_{GS}=4.5V,$ $I_D=3.6A$		2.3	3	nC
Q_{gs}	Gate-Source Charge			1.0		
Q_{gd}	Gate-Drain Charge			0.6		
C_{iss}	Input Capacitance	$V_{DS}=15V, V_{GS}=0V,$ $f=1\text{MHz}$		280		pF
C_{oss}	Output Capacitance			40		
C_{rss}	Reverse Transfer Capacitance			20		
$t_{d(on)}$	Turn-On Time	$V_{DD}=15V, R_L=15\Omega,$ $I_D=1.0A, V_{GEN}=10V,$ $R_G=6\Omega$		10	15	ns
t_r				12	20	
$t_{d(off)}$	Turn-Off Time			15	25	
t_f				10	15	

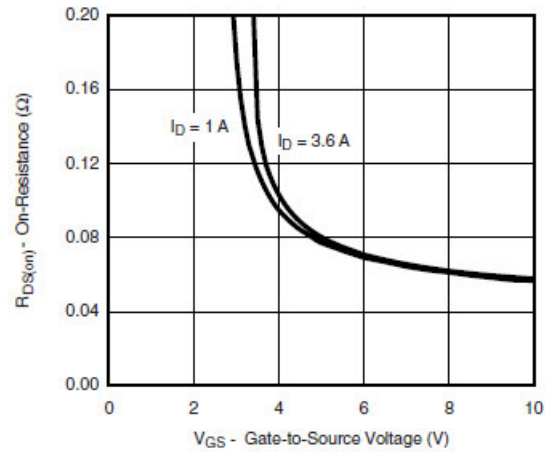
Typical Performance Characteristics



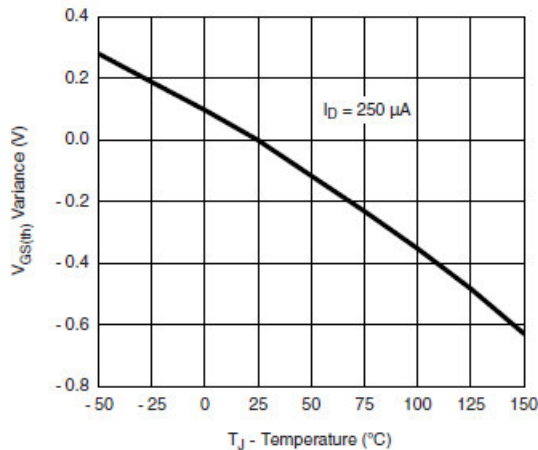
Typical Performance Characteristics (continue)



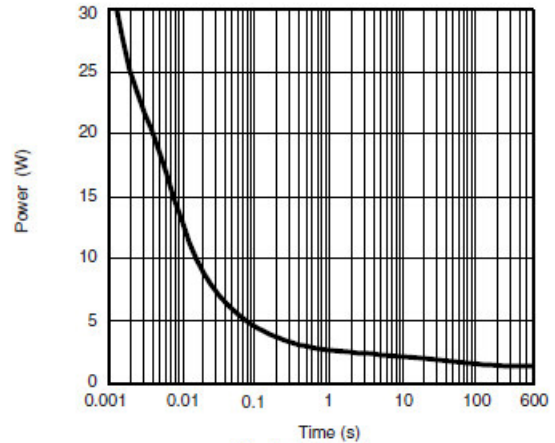
Source-Drain Diode Forward Voltage



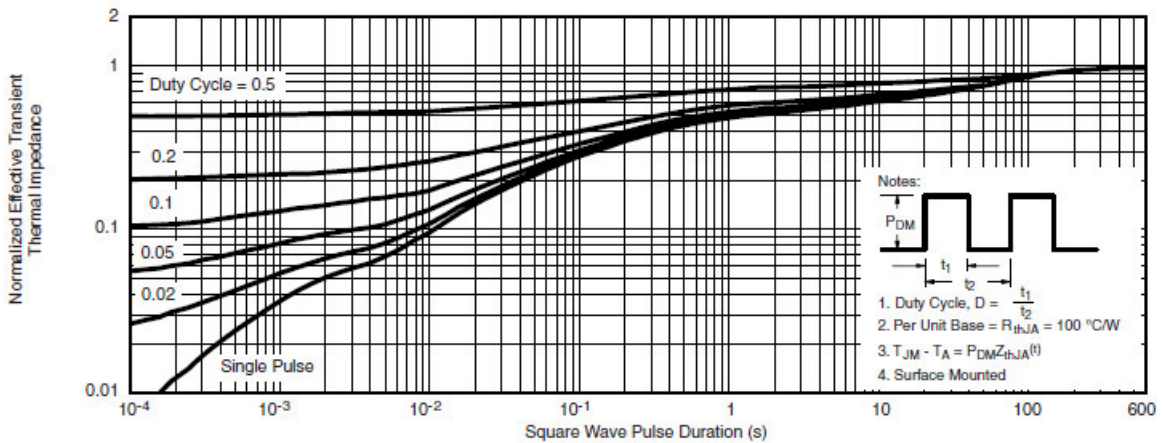
On-Resistance vs. Gate-to-Source Voltage



Threshold Voltage



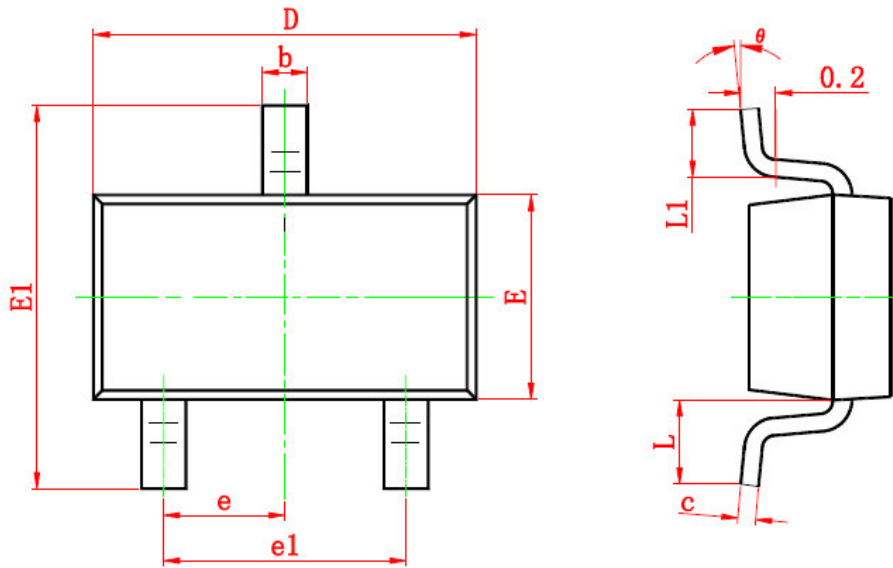
Single Pulse Power



Normalized Thermal Transient Impedance, Junction-to-Ambient

Package Dimension

SOT-23 PLASTIC PACKAGE











Dimensions				
SYMBOL	Millimeters		Inches	
	MIN	MAX	MIN	MAX
A	0.90	1.20	0.035	0.043
A1	0.00	0.10	0.000	0.004
A2	0.90	1.10	0.035	0.039
b	0.30	0.50	0.012	0.020
c	0.08	0.15	0.003	0.006
D	2.80	3.00	0.110	0.118
E	1.20	1.40	0.047	0.055
E1	2.25	2.55	0.089	0.100
e	0.950 (TYP)		0.037 (TYP)	
e1	1.80	2.00	0.071	0.079
L	0.550 (REF)		0.022 (REF)	
L1	0.30	0.50	0.012	0.020
Q	0°	8°	0°	8°



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