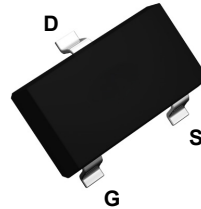
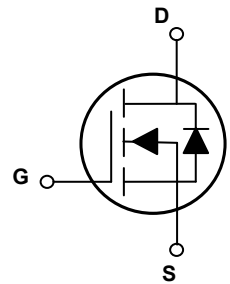


Main Product Characteristics

$V_{(BR)DSS}$	100V
$R_{DS(ON)}$	220m Ω (Typ.)
I_D	3A



SOT-23



Schematic Diagram

Features and Benefits

- Advanced MOSFET process technology
- Low on-resistance and low gate charge.
- Featuring low switching and drive losses.
- Fast switching and reverse body recovery.
- High ruggedness and robustness.



Description

The GSFC28110 utilizes the latest techniques to achieve high cell density and low on-resistance. These features make this device extremely efficient and reliable for use in high efficiency switch mode power supplies and a wide variety of other applications.

Absolute Maximum Ratings ($T_J=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Parameter	Unit
Drain-Source Voltage	V_{DS}	100	V
Gate-to-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current, @ Steady-State ($T_C=25^{\circ}\text{C}$)	I_D	3	A
Continuous Drain Current, @ Steady-State ($T_C=100^{\circ}\text{C}$)		1.8	A
Pulsed Drain Current ($T_C=25^{\circ}\text{C}$) ¹	I_{DM}	12	A
Power Dissipation ($T_C=25^{\circ}\text{C}$)	P_D	2.1	W
Thermal Resistance, Junction-to-Ambient (PCB Mounted, Steady-State)	$R_{\theta JA}$	62	$^{\circ}\text{C}/\text{W}$
Operating Junction and Storage Temperature Range	T_J/T_{STG}	-55 to +150	$^{\circ}\text{C}$
Soldering temperature (SMD)	T_{sold}	260	$^{\circ}\text{C}$

Electrical Characteristics ($T_J=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
On / Off Characteristics						
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V, I_D=250\mu A$	100	-	-	V
BV_{DSS} Temperature Coefficient	$\Delta BV_{DSS}/\Delta T_J$	Reference to $25^\circ\text{C}, I_D=1\text{mA}$	-	0.1	-	$V/^\circ\text{C}$
Drain-Source Leakage Current	I_{DSS}	$V_{DS}=100V, V_{GS}=0V, T_J=25^\circ\text{C}$	-	-	1	μA
		$V_{DS}=80V, V_{GS}=0V, T_J=125^\circ\text{C}$	-	-	10	μA
Gate-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 20V, V_{DS}=0V$	-	-	± 100	nA
Static Drain-Source On-Resistance	$R_{DS(ON)}$	$V_{GS}=10V, I_D=2A$	-	220	284	m Ω
		$V_{GS}=4.5V, I_D=1A$	-	240	400	
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	1.1	-	2.9	V
$V_{GS(th)}$ Temperature Coefficient	$\Delta V_{GS(th)}$		-	-4	-	$\text{mV}/^\circ\text{C}$
Forward Transconductance	gfs	$V_{DS}=10V, I_D=1A$	-	2	-	S
Dynamic and Switching Characteristics						
Total Gate Charge ^{2,3}	Q_g	$V_{DS}=50V, I_D=2A, V_{GS}=10V$	-	13.4	-	nC
Gate-Source Charge ^{2,3}	Q_{gs}		-	2.9	-	
Gate-Drain Charge ^{2,3}	Q_{gd}		-	1.7	-	
Turn-On Delay Time ^{2,3}	$t_{d(on)}$	$V_{DD}=30V, R_G=3.3\Omega, V_{GS}=10V, I_D=1A$	-	1.6	-	nS
Rise Time ^{2,3}	t_r		-	6.6	-	
Turn-Off Delay Time ^{2,3}	$t_{d(off)}$		-	11.5	-	
Fall Time ^{2,3}	t_f		-	3.6	-	
Input Capacitance	C_{iss}	$V_{DS}=50V, V_{GS}=0V, F=1\text{MHz}$	-	820	-	pF
Output Capacitance	C_{oss}		-	35	-	
Reverse Transfer Capacitance	C_{rss}		-	20	-	
Gate Resistance	R_g	$V_{GS}=0V, V_{DS}=0V, F=1\text{MHz}$	-	1.3	-	Ω
Source-Drain Ratings and Characteristics						
Continuous Source Current	I_S	$V_G=V_D=0V,$ Force Current	-	-	3	A
Pulsed Source Current	I_{SM}		-	-	6	A
Diode Forward Voltage	V_{SD}	$V_{GS}=0V, I_S=1A, T_J=25^\circ\text{C}$	-	-	1	V

Notes:

1. Repetitive rating; pulse width limited by max. junction temperature.
2. Pulse test: Pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$.
3. Essentially independent of operation temperature.

Typical Electrical and Thermal Characteristic Curves

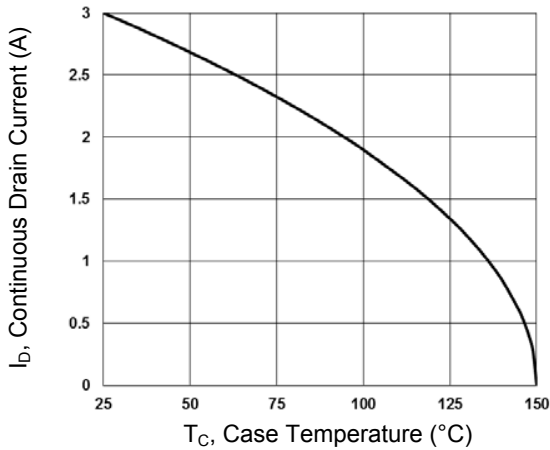


Figure 1. Continuous Drain Current vs. T_C

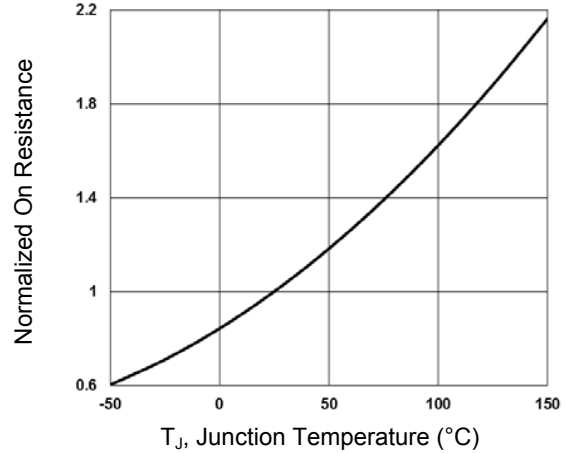


Figure 2. Normalized $R_{DS(ON)}$ vs. T_J

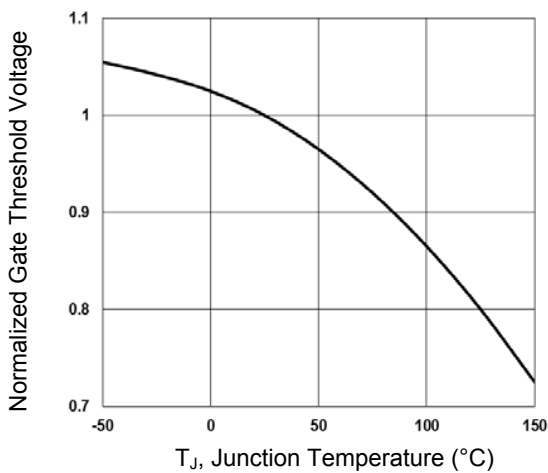


Figure 3. Normalized V_{th} vs. T_J

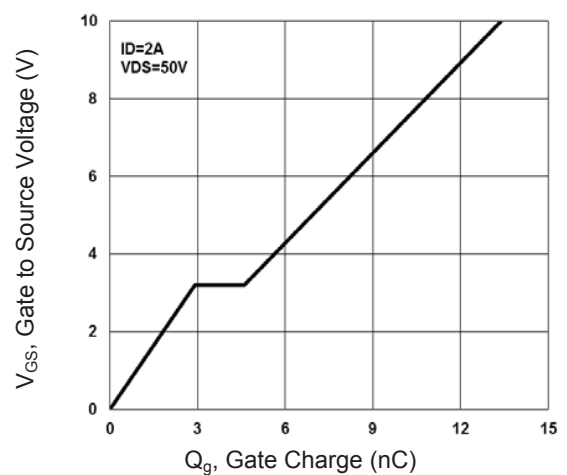


Figure 4. Gate Charge Waveform

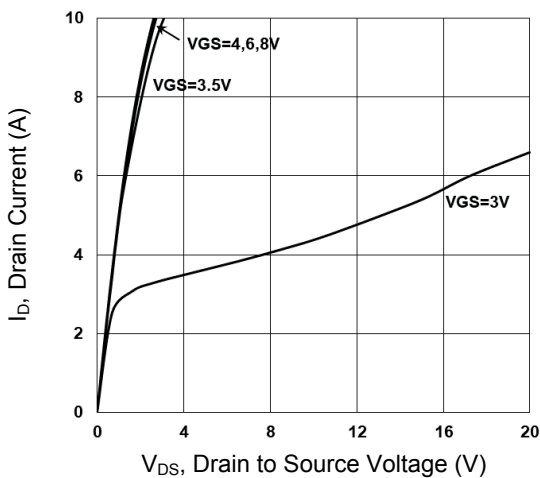


Figure 5. Typical Output Characteristics

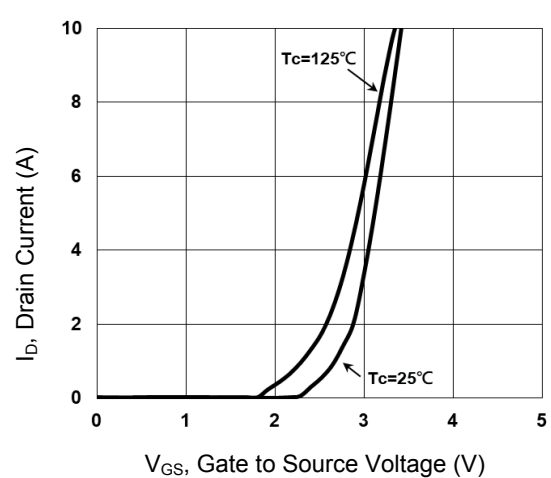
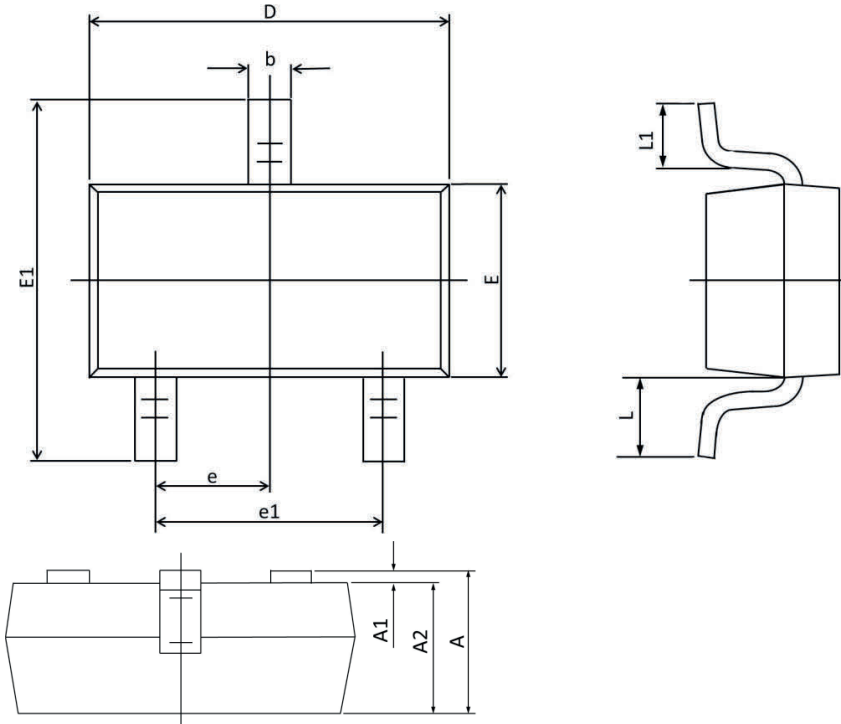


Figure 6. Transfer Characteristics

Package Outline Dimensions (SOT-23)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.200	0.035	0.047
A1	0.000	0.100	0.000	0.004
A2	0.900	1.150	0.035	0.045
b	0.300	0.500	0.012	0.020
D	2.800	3.040	0.110	0.120
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.95 TYP.		0.037 TYP.	
e1	1.800	2.000	0.071	0.079
L	0.55 REF.		0.022 REF.	
L1	0.300	0.500	0.012	0.020

Order Information

Device	Package	Marking	Carrier	Quantity
GSFC28110	SOT-23	C28110	Tape & Reel	3,000 pcs / Reel

For more information, please contact us at: inquiry@goodarksemi.com