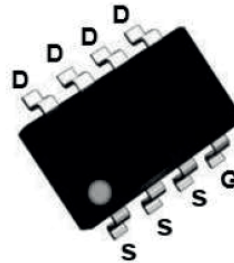
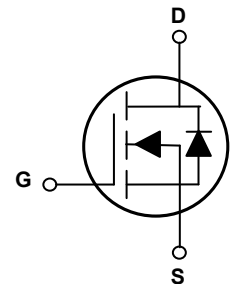


Main Product Characteristics

$V_{(BR)DSS}$	150V
$R_{DS(ON)}$	300m Ω (Max.)
I_D	2A



SOP-8



Schematic Diagram

Features and Benefits

- Advanced MOSFET process technology
- Ideal for high efficiency switched mode power supplies
- Low on-resistance with low gate charge
- Fast switching and reverse body recovery



Description

The GSFQ1502 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 ($T_C=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	150	V
Gate-Source Voltage	V_{GS}	± 20	V
Drain Current-Continuous ($T_A=25^{\circ}\text{C}$)	I_D	2	A
Drain Current-Continuous ($T_A=100^{\circ}\text{C}$)		1.3	A
Drain Current-Pulsed ¹	I_{DM}	8	A
Power Dissipation ($T_A=25^{\circ}\text{C}$)	P_D	3.2	W
Power Dissipation-De-rate Above 25°C		0.026	W/ $^{\circ}\text{C}$
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	50	$^{\circ}\text{C/W}$
Storage Temperature Range	T_{STG}	-55 to +150	$^{\circ}\text{C}$
Operating Junction Temperature Range	T_J	-55 to +150	$^{\circ}\text{C}$

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 =250uA	150	-	-	V
BV _{DSS} Temperature Coefficient	△BV _{DSS} /△T _J	Reference to 25°C, I _D =1mA	-	0.02	-	V/°C
Drain-Source Leakage Current	I _{DSS}	V _{DS} =150V, V _{GS} =0V, T _J =25°C	-	-	1	uA
		V _{DS} =120V, V _{GS} =0V, T _J =125°C	-	-	10	uA
Gate-Source Leakage Current	I _{GSS}	V _{GS} =±20V, V _{DS} =0V	-	-	±100	nA
Static Drain-Source On-Resistance	R _{DS(ON)}	V _{GS} =10V, I _D =2A	-	240	300	mΩ
Gate Threshold Voltage	V _{GS(th)}	V _{GS} =V _{DS} , I _D =250uA	2	3	4	V
V _{GS(th)} Temperature Coefficient	△V _{GS(th)}		-	-2	-	mV/°C
Forward Transconductance	g _{fs}	V _{DS} =5V, I _D =2A	-	4.5	-	S
Dynamic and Switching Characteristics						
Total Gate Charge ^{2,3}	Q _g	V _{DS} =75V, V _{GS} =10V, I _D =3A	-	16	-	nC
Gate-Source Charge ^{2,3}	Q _{gs}		-	2.2	-	
Gate-Drain Charge ^{2,3}	Q _{gd}		-	6.3	-	
Turn-On Delay Time ^{2,3}	t _{d(on)}	V _{DD} =75V, V _{GS} =10V, R _G =6Ω, I _D =3A	-	9	-	nS
Rise Time ^{2,3}	t _r		-	11	-	
Turn-Off Delay Time ^{2,3}	t _{d(off)}		-	24	-	
Fall Time ^{2,3}	t _f		-	8	-	
Input Capacitance	C _{iss}	V _{DS} =25V, V _{GS} =0V, F=1MHz	-	734	-	pF
Output Capacitance	C _{oss}		-	14	-	
Reverse Transfer Capacitance	C _{rss}		-	5	-	
Source-Drain Ratings and Characteristics						
Continuous Source Current	I _S	V _G =V _D =0V, Force Current	-	-	2	A
Pulsed Source Current	I _{SM}		-	-	8	A
Diode Forward Voltage	V _{SD}	V _{GS} =0V, I _S =2A, T _J =25°C	-	-	1.2	V

Notes:

1. Repetitive rating: Pulsed width limited by maximum junction temperature.
2. Pulse test: pulse width $\leq 300\mu S$, duty cycle $\leq 2\%$.
3. Essentially independent of operating temperature.

Typical Electrical and Thermal Characteristic Curves

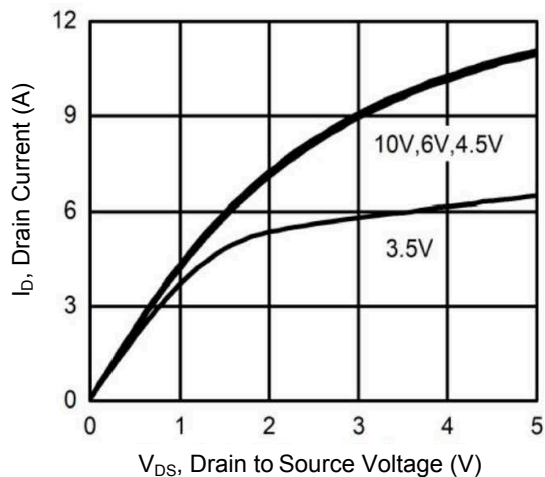


Figure 1. Output Characteristics

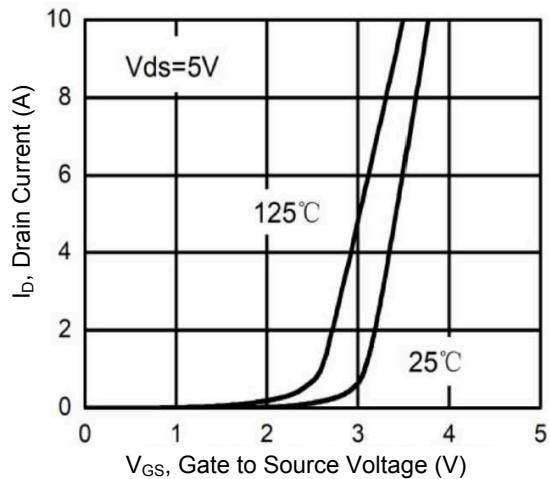


Figure 2. Transfer Characteristics

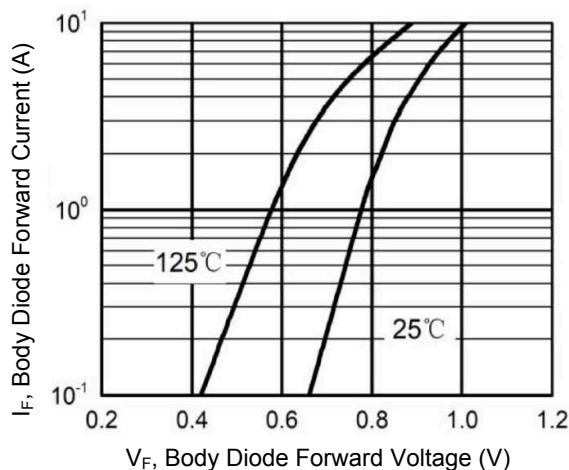


Figure 3. Body Diode Characteristics

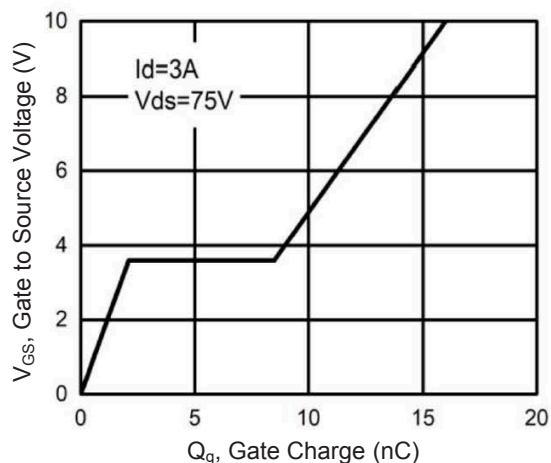


Figure 4. Gate Charge Waveform

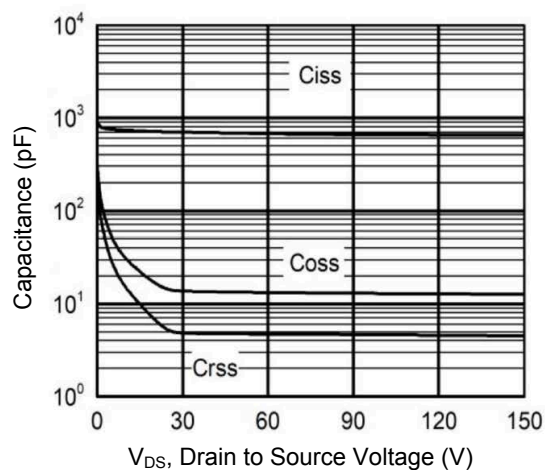


Figure 5. Capacitance Characteristics

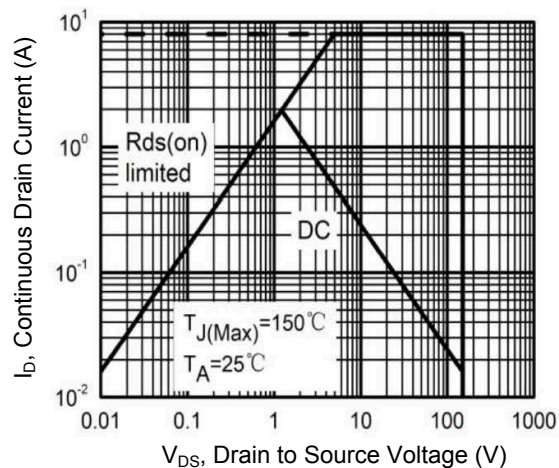
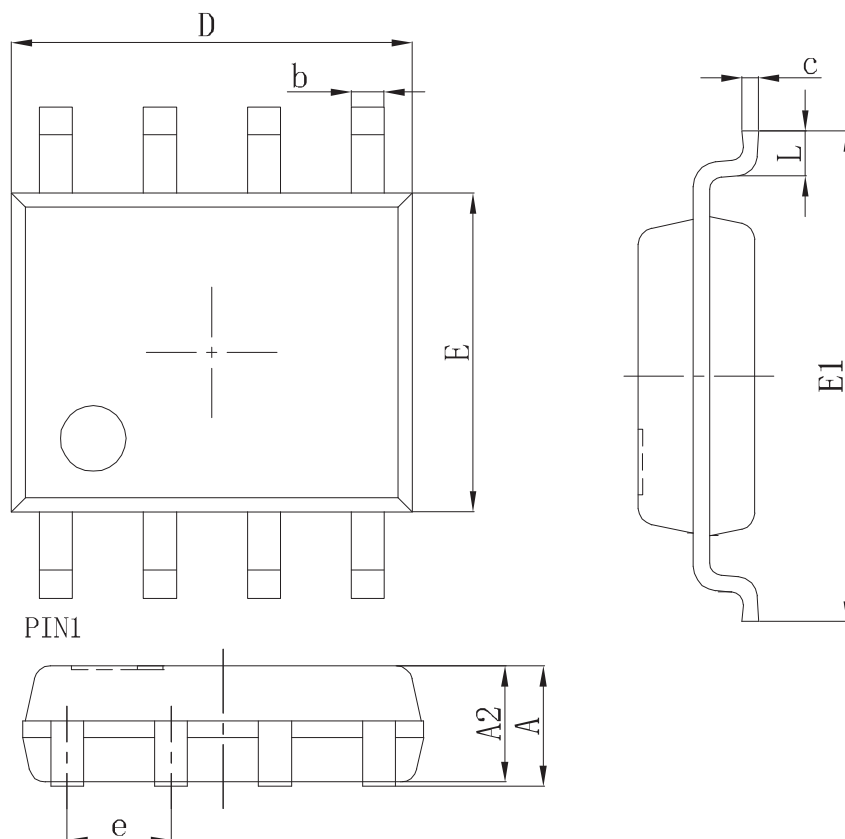


Figure 6. Maximum Safe Operation Area

Package Outline Dimensions (SOP-8)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.30	1.70	0.051	0.067
A2	1.25	1.55	0.049	0.061
c	0.17	0.25	0.007	0.010
E	3.80	4.00	0.150	0.157
E1	5.80	6.20	0.228	0.244
L	0.45	0.75	0.018	0.030
b	0.33	0.51	0.013	0.020
D	4.80	5.00	0.189	0.197
e	1.27 BSC		0.050 BSC	

Order Information

Device	Package	Marking	Carrier	Quantity
GSFQ1502	SOP-8	Q1502	Tape & Reel	3,000 Pcs / Reel

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