

GSM1073K

20V P-Channel Enhancement Mode MOSFET

Product Description

GSM1073K, P-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 low in-line power loss are needed in commercial industrial surface mount applications.

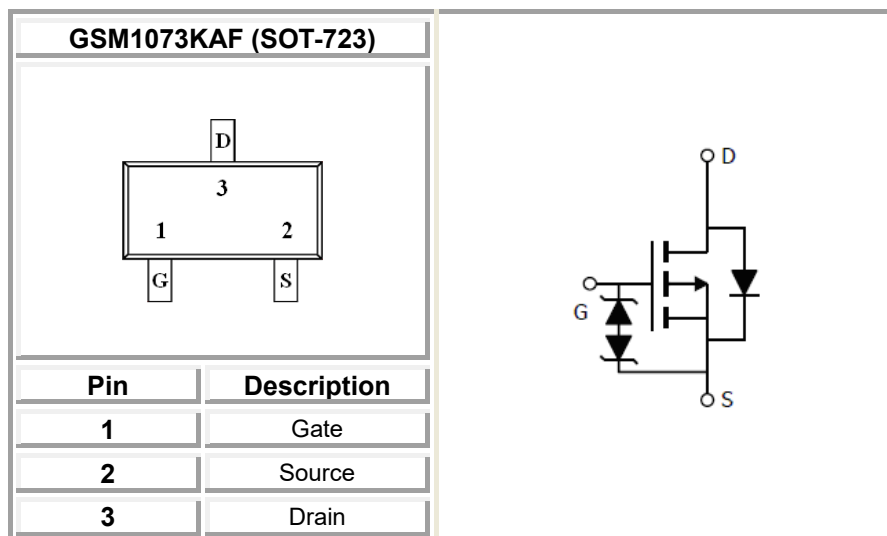
Features

- -20V/-0.45A, $R_{DS(ON)}=650m\Omega@V_{GS}=-4.5V$
- -20V/-0.35A, $R_{DS(ON)}=900m\Omega@V_{GS}=-2.5V$
- -20V/-0.25A, $R_{DS(ON)}=1500m\Omega@V_{GS}=-1.8V$
- Low Offset (Error) Voltage
- Low-Voltage Operation
- High-Speed Circuits
- Low Battery Voltage Operation
- ESD Protection
- SOT-723 package design

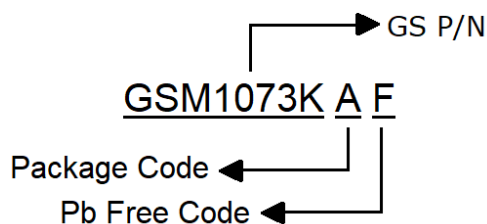
Applications

- Drivers : Relays, Solenoids, Lamps, Hammers
- Battery Operated Systems
- Power Supply Converter Circuits
- Load/Power Switching Smart Phones, Pagers

Packages & Pin Assignments

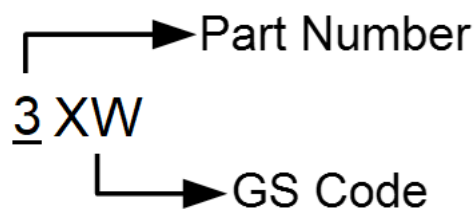
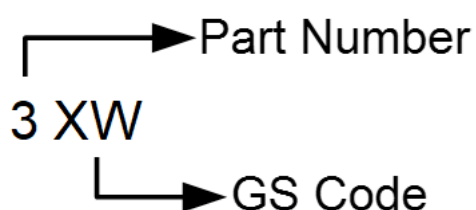


Ordering Information



Part Number	Package	Quantity Reel
GSM1073KAF	SOT-723	8000 PCS

Marking Information



Absolute Maximum Ratings

(T_A=25°C unless otherwise noted)

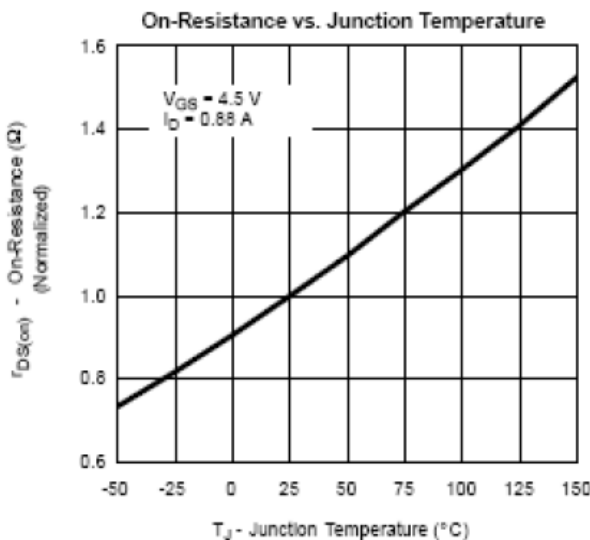
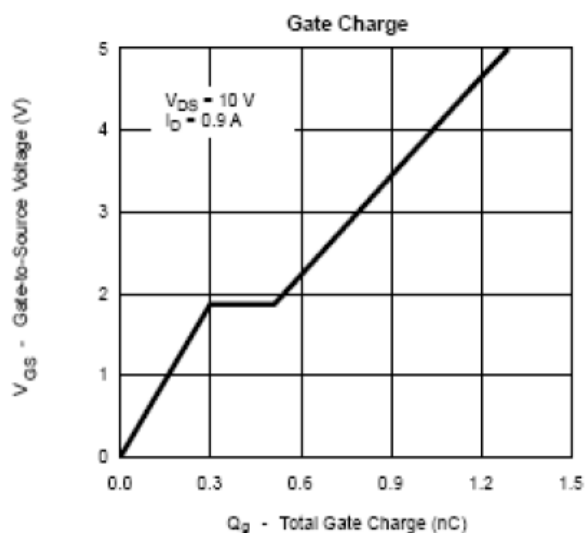
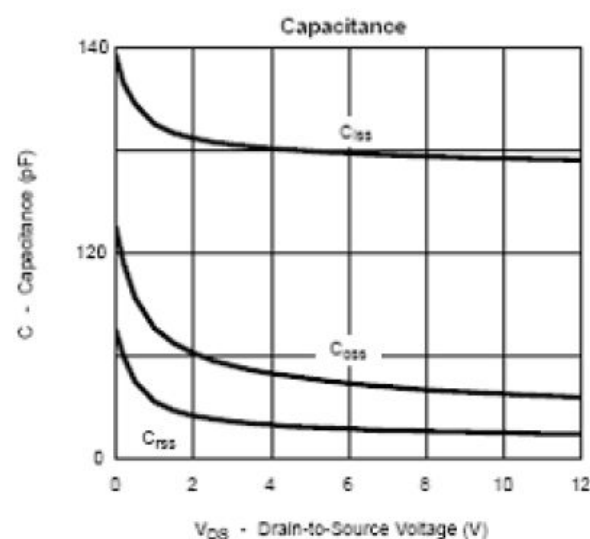
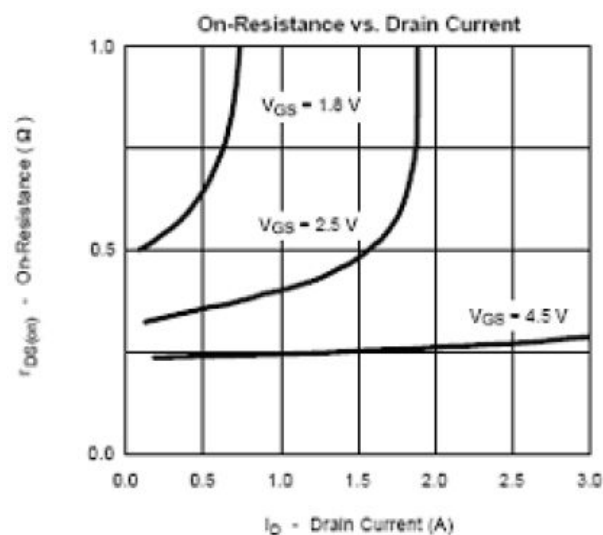
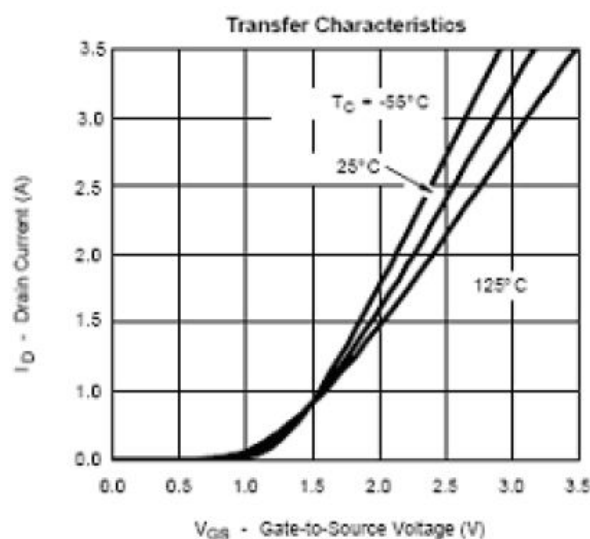
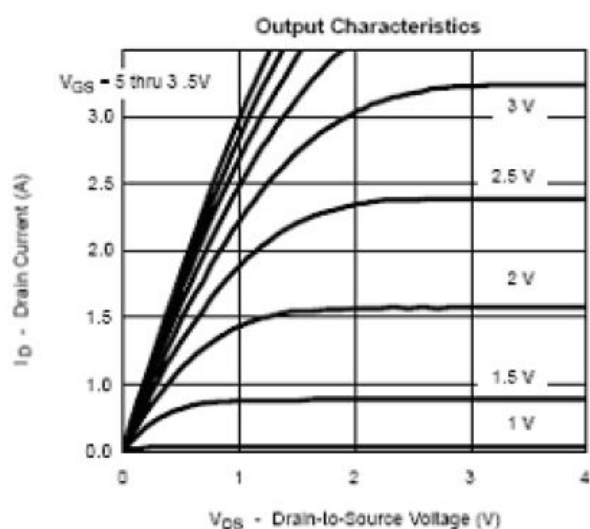
Symbol	Parameter		Typical	Unit
V _{DSS}	Drain-Source Voltage		-20	V
V _{GSS}	Gate-Source Voltage		±12	V
I _D	Continuous Drain Current(T _J =150℃)	T _A =25℃	-0.45	A
		T _A =70℃	-0.35	
I _{DM}	Pulsed Drain Current		-1.0	A
I _S	Continuous Source Current(Diode Conduction)		-0.3	A
P _D	Power Dissipation	T _A =25℃	0.27	W
		T _A =70℃	0.16	
T _J	Operating Junction Temperature Range		-55 to +150	℃
T _{STG}	Storage Temperature Range		-55 to +150	℃

Electrical Characteristics

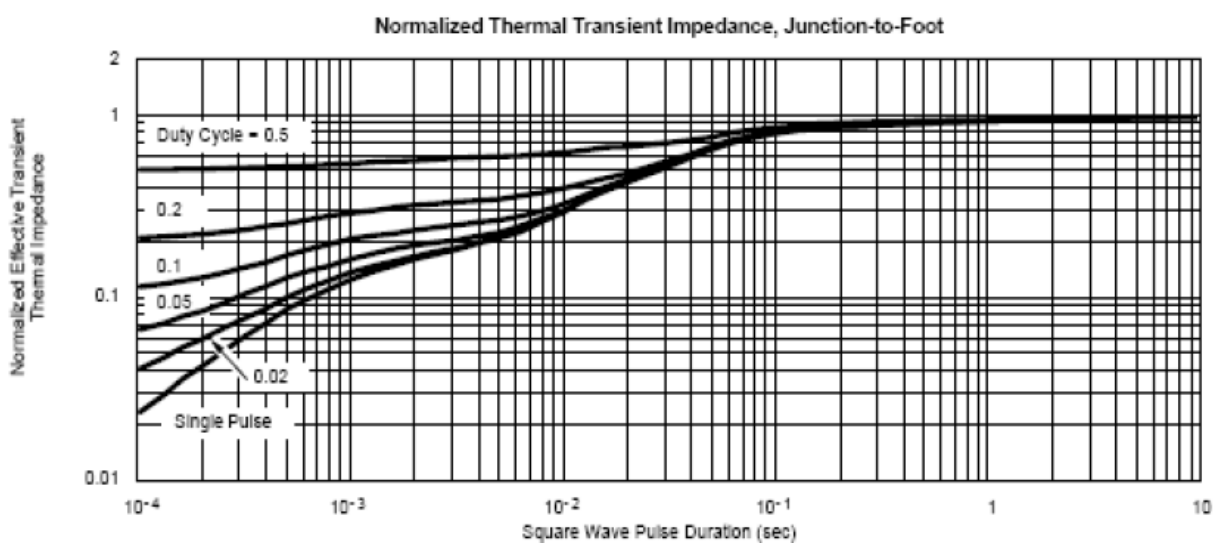
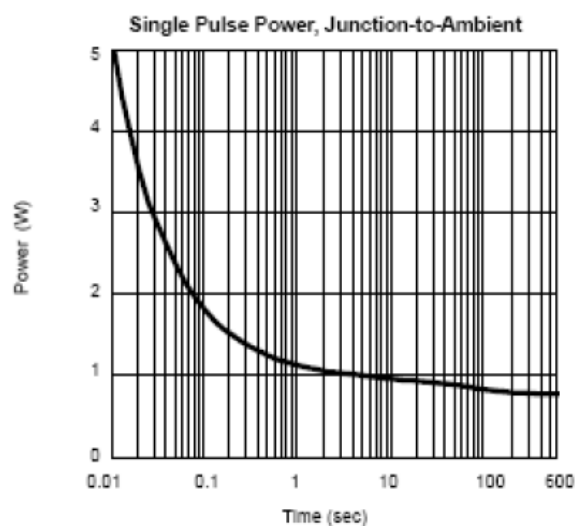
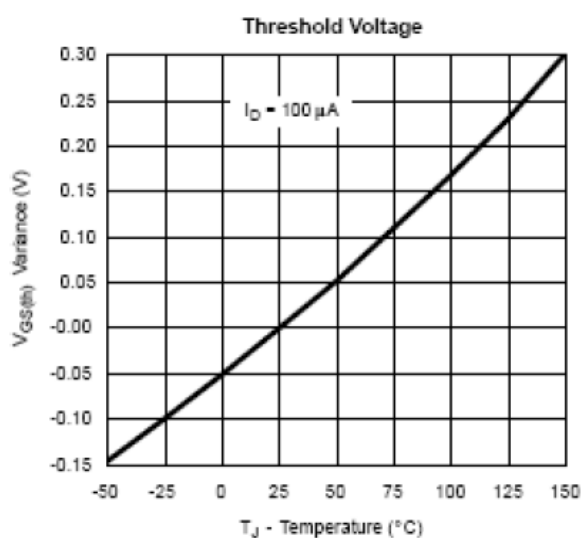
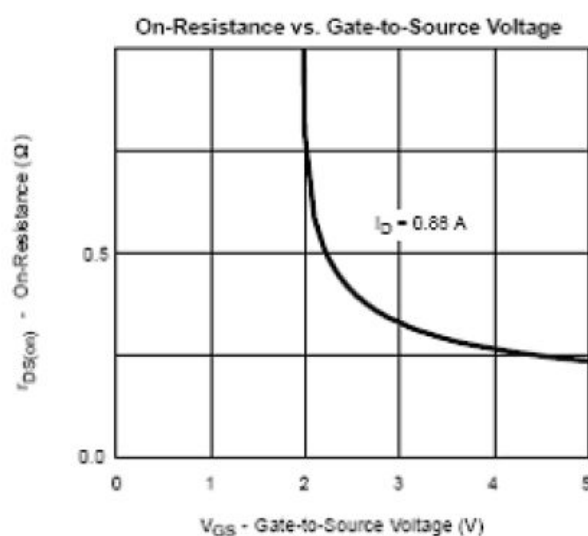
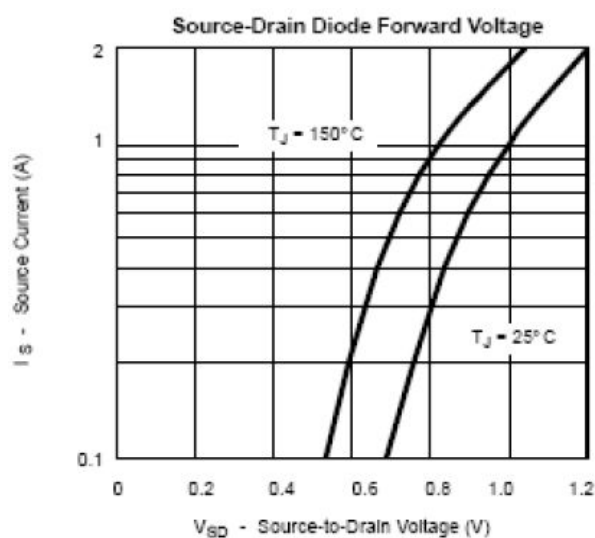
(T_A=25°C unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
Static						
V _{(BR)DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V,I _D =-250uA	-20			V
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} ,I _D =-250uA	-0.35		-1.0	
I _{GSS}	Gate Leakage Current	V _{DS} =0V,V _{GS} =±12V			±30	uA
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =-20V,V _{GS} =0V			-1	uA
		V _{DS} =-20V,V _{GS} =0V, T _J =55°C			-5	
I _{D(on)}	On-State Drain Current	V _{DS} ≤-5V,V _{GS} =-4.5V	-0.7			A
R _{DS(on)}	Drain-Source On-Resistance	V _{GS} =-4.5V,I _D =-0.45A			650	mΩ
		V _{GS} =-2.5V,I _D =-0.35A			900	
		V _{GS} =-1.8V,I _D =-0.25A			1500	
g _{FS}	Forward Transconductance	V _{DS} =-10V,I _D =-0.25A		0.4		S
V _{SD}	Diode Forward Voltage	I _S =-0.15A,V _{GS} =0V		-0.8	-1.2	V
Dynamic						
Q _g	Total Gate Charge	V _{DS} =-10V,V _{GS} =-4.5V, I _D =-0.6A		1.5	2.0	nC
Q _{gs}	Gate-Source Charge			0.3		
Q _{gd}	Gate-Drain Charge			0.35		
C _{iss}	Input Capacitance	V _{DS} =-10V,V _{GS} =0V f=1MHz		40	78	pF
C _{OSS}	Output Capacitance			15	30	
C _{rSS}	Reverse Transfer Capacitance			6.5	13	
t _{d(on)}	Turn-On Time	V _{DD} =-10V,R _L =10Ω, I _D =-0.4A,V _{GS} =-4.5V, R _G =6Ω		5	10	ns
t _r				15	25	
t _{d(off)}	Turn-Off Time			8	15	
t _f				1.4	1.8	

Typical Performance Characteristics

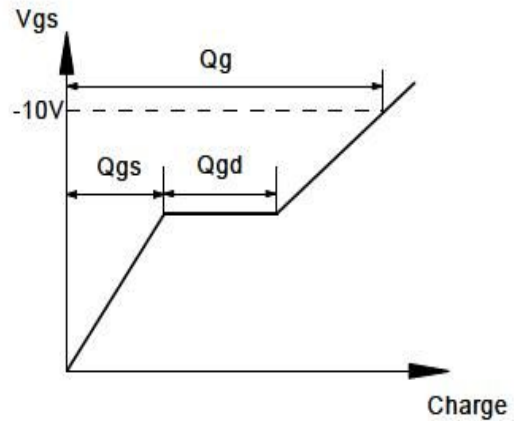
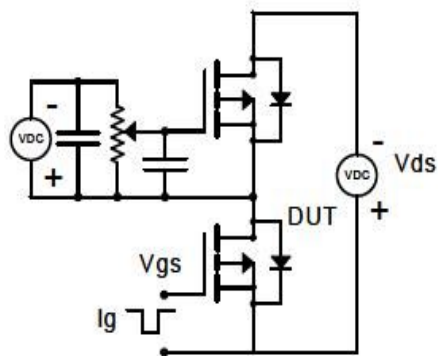


Typical Performance Characteristics (continue)

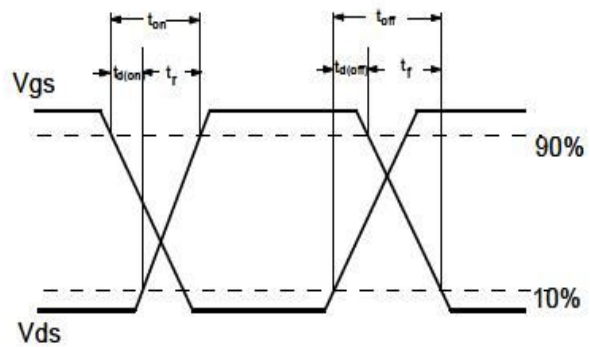
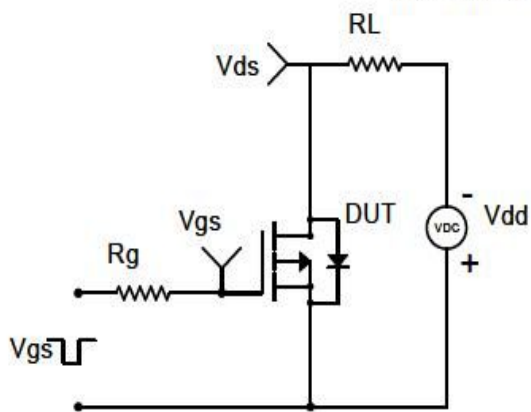


Typical Performance Characteristics (continue)

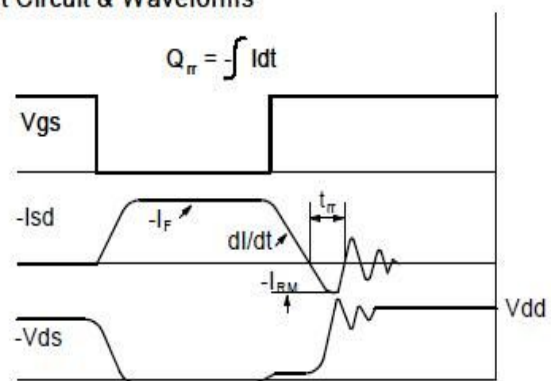
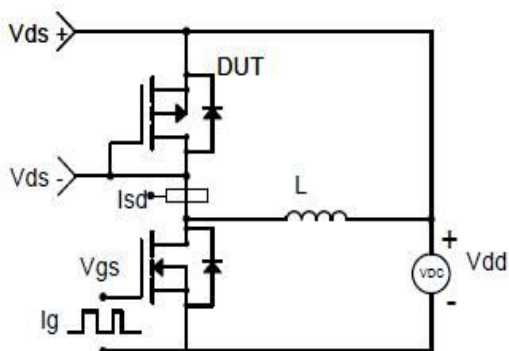
Gate Charge Test Circuit & Waveform



Resistive Switching Test Circuit & Waveforms

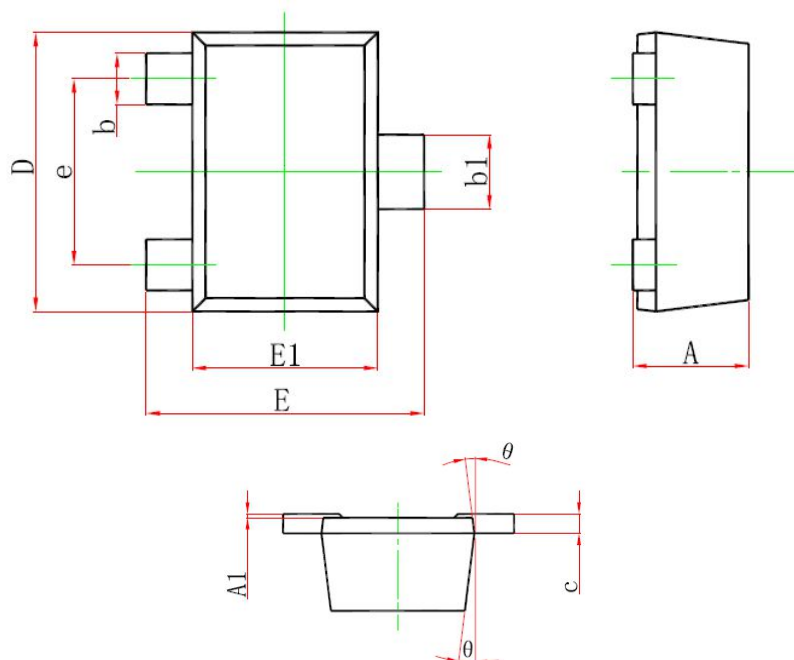


Diode Recovery Test Circuit & Waveforms



Package Dimension

SOT-723



Dimensions				
Symbol	Millimeters		Inches	
	Min	Max	Min	Max
A	-	0.500	-	0.020
A1	0.000	0.050	0.000	0.002
b	0.170	0.270	0.007	0.011
b1	0.270	0.370	0.011	0.015
c	-	0.150	-	0.006
D	1.150	1.250	0.045	0.049
E	1.150	1.250	0.045	0.049
E1	0.750	0.850	0.030	0.033
e	0.800 TYP		0.031 TYP	
θ	7° REF		7° REF	

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CONTACT US

GS Headquarter	
	4F.,No.43-1,Lane11,Sec.6,Minquan E.Rd NeiHu District Taipei City 114, Taiwan (R.O.C)
	886-2-2657-9980
	886-2-2657-3630
	sales_twn@gs-power.com

RD Division	
	824 Bolton Drive Milpitas. CA. 95035
	1-408-457-0587