

GSM1072K

20V N-Channel Enhancement Mode MOSFET

Product Description

GSM1072K, 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 low in-line power loss are needed in commercial industrial surface mount applications.

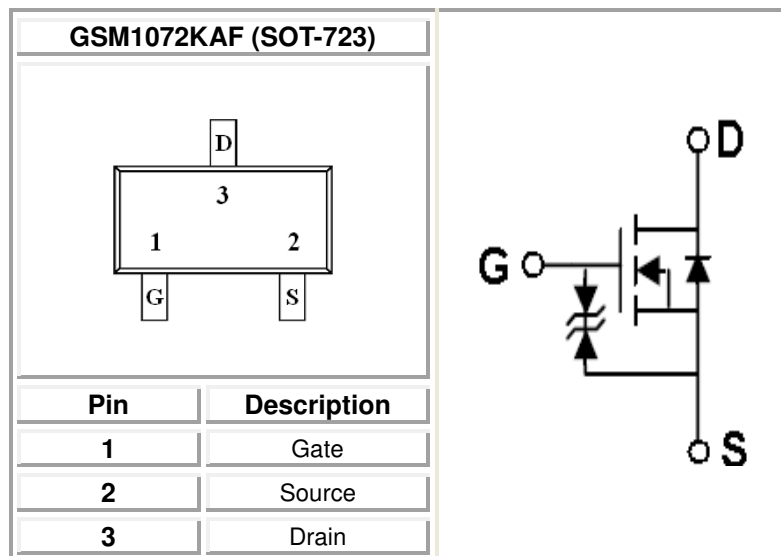
Features

- 20V/0.95A, $R_{DS(ON)}=380m\Omega@V_{GS}=4.5V$
- 20V/0.75A, $R_{DS(ON)}=450m\Omega@V_{GS}=2.5V$
- 20V/0.65A, $R_{DS(ON)}=800m\Omega@V_{GS}=1.8V$
- 20V/0.65A, $R_{DS(ON)}=1000m\Omega@V_{GS}=1.5V$
- Low Offset (Error) Voltage
- Low-Voltage Operation
- High-Speed Circuits
- Low Battery Voltage Operation
- ESD Protected
- SOT-723 package design

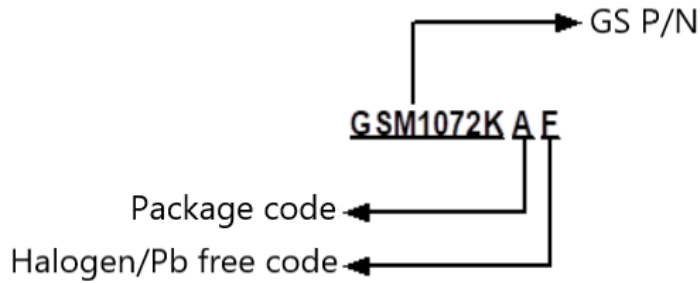
Applications

- Power Management in Notebook
- Portable Equipment
- Battery Powered System
- DC/DC Converter
- Load Switch
- DSC
- LCD Display inverter

Packages & Pin Assignments

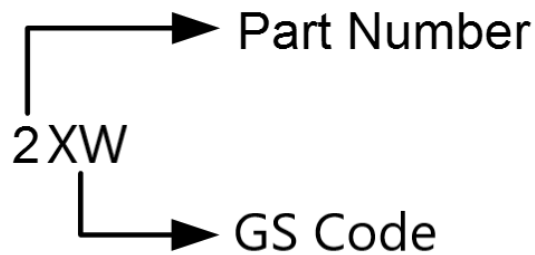


Ordering Information



Part Number	Package	Quantity Reel
GSM1072KAF	SOT-723	8000 PCS

Marking Information



Absolute Maximum Ratings

(T_A=25°C unless otherwise noted)

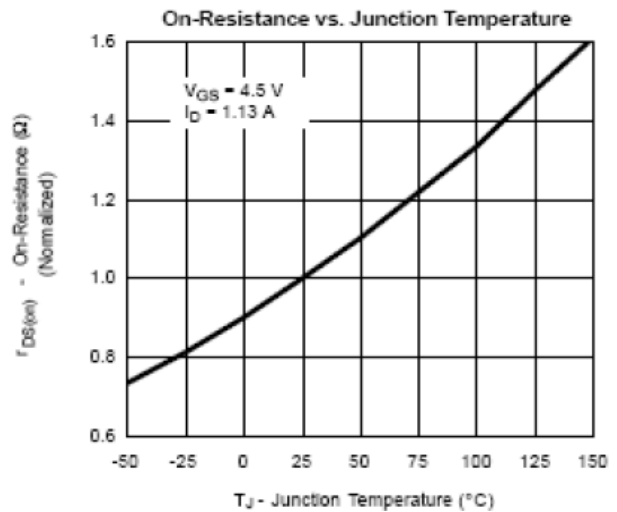
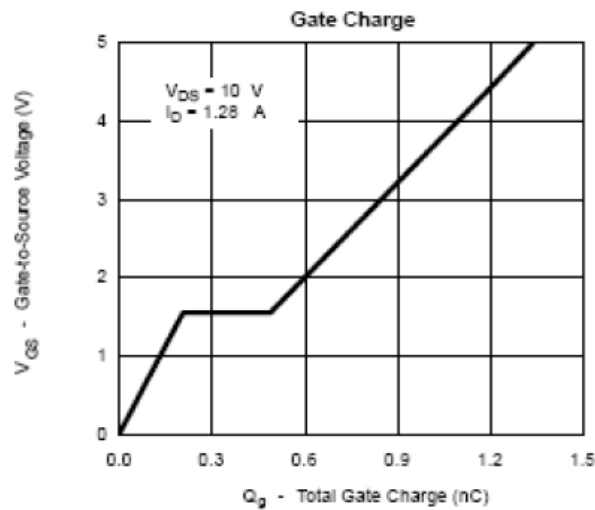
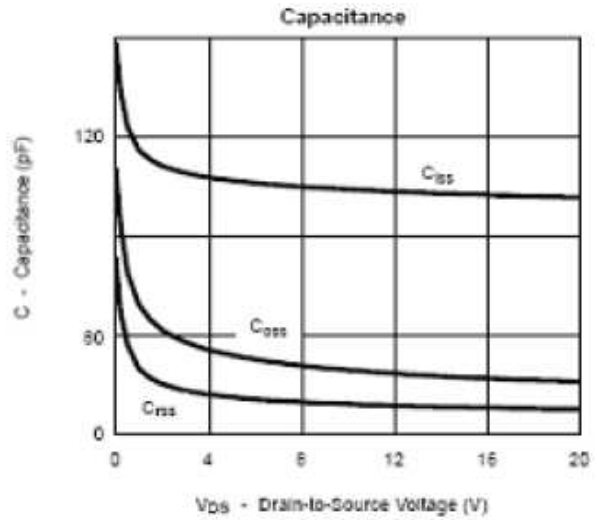
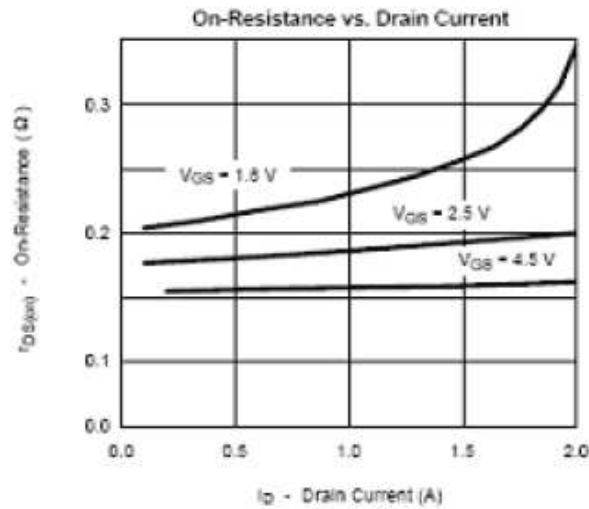
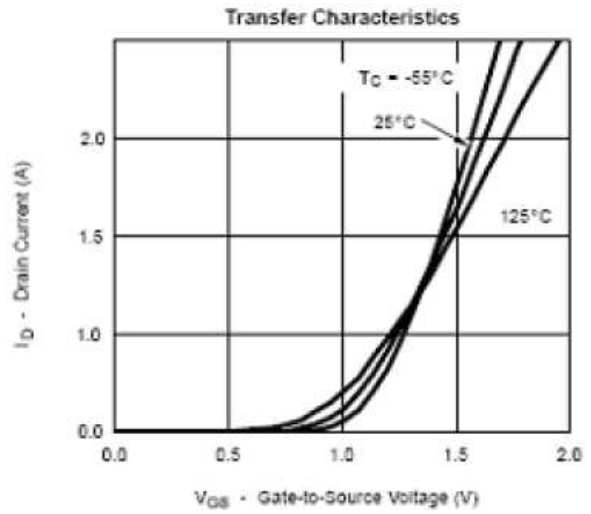
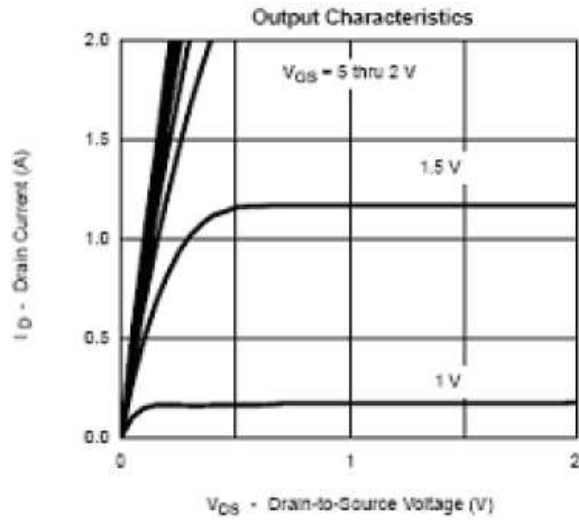
Symbol	Parameter	Typical	Unit
V _{DSS}	Drain-Source Voltage	20	V
V _{GSS}	Gate-Source Voltage	±12	V
I _D	Continuous Drain Current(T _J =150°C)	0.95	A
I _{DM}	Pulsed Drain Current	4.0	A
I _S	Continuous Source Current(Diode Conduction)	0.3	A
P _D	Power Dissipation	0.15	W
T _J	Operating Junction Temperature Range	-55 to +150	°C
T _{STG}	Storage Temperature Range	-55 to +150	°C

Electrical Characteristics

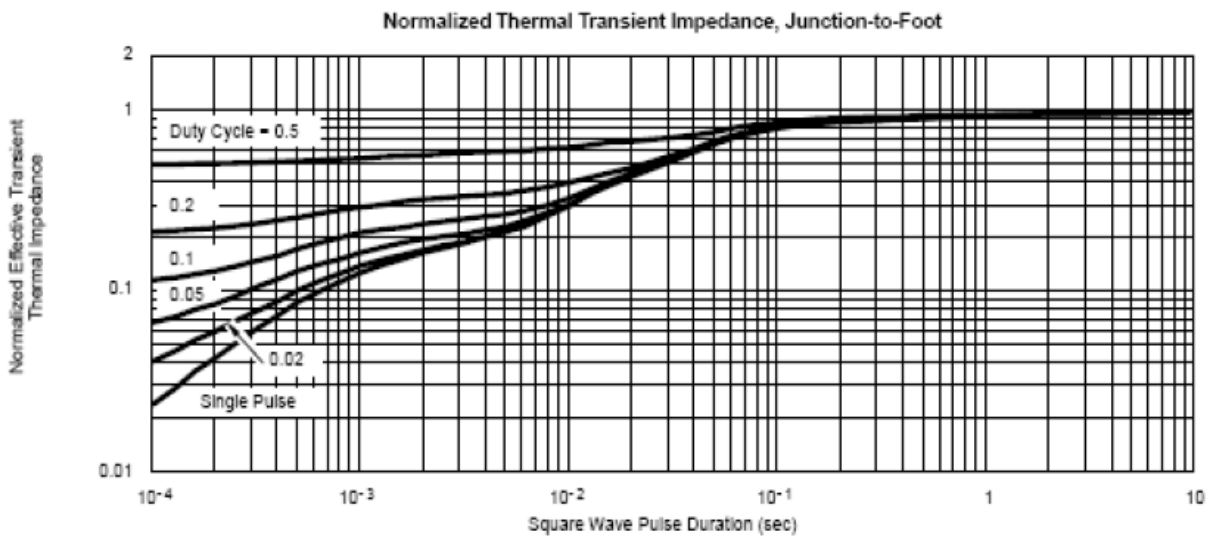
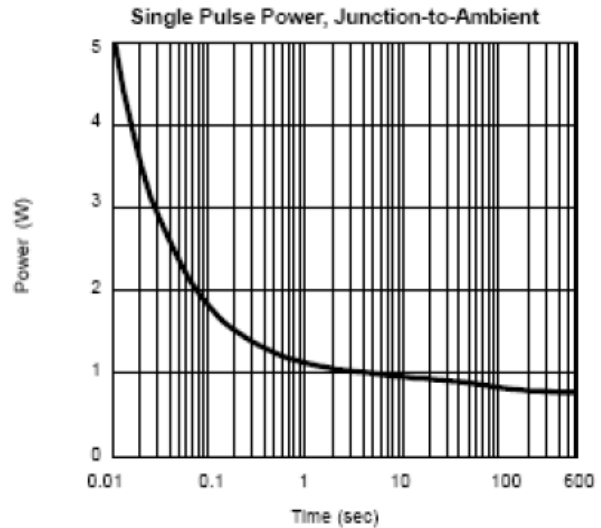
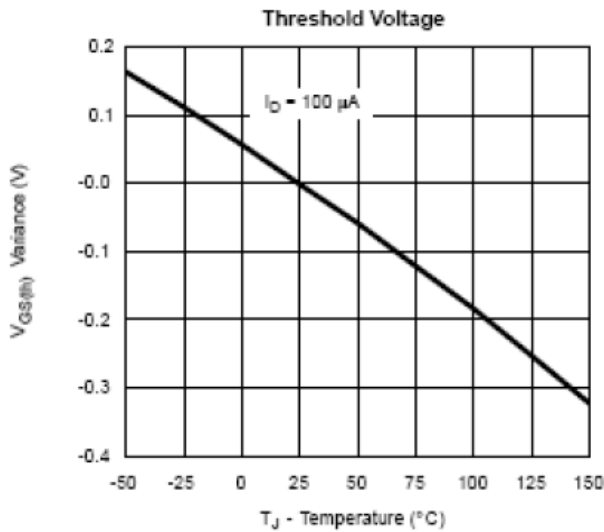
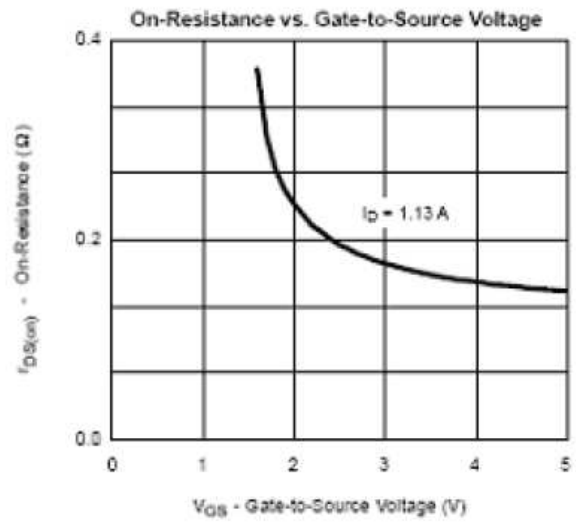
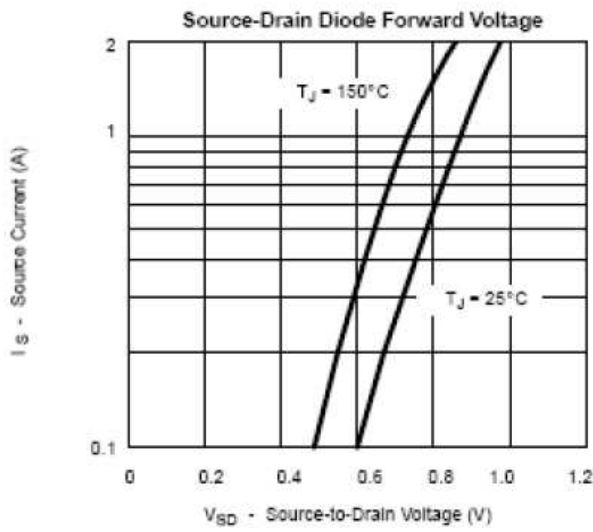
(T_A=25°C unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
Static						
V _{(BR)DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =250μA	20			V
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =250μA	0.35		1.0	
I _{GSS}	Gate Leakage Current	V _{DS} =0V, V _{GS} =±12V			30	μA
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =20V, V _{GS} =0V			1	μA
		V _{DS} =20V, V _{GS} =0V T _J =55°C			5	
I _{D(on)}	On-State Drain Current	V _{DS} ≥4.5V, V _{GS} =5V	0.7			A
R _{DS(on)}	Drain-Source On-Resistance	V _{GS} =4.5V, I _D =0.95A		260	380	mΩ
		V _{GS} =2.5V, I _D =0.75A		320	450	
		V _{GS} =1.8V, I _D =0.65A		420	800	
		V _{GS} =1.5V, I _D =0.65A		500	1000	
g _{FS}	Forward Transconductance	V _{DS} =10V, I _D =0.4A		1.0		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 =0.5A		1	2	nC
Q _{gs}	Gate-Source Charge			0.26		
Q _{gd}	Gate-Drain Charge			0.2		
C _{iss}	Input Capacitance	V _{DS} =10V, V _{GS} =0V f=1MHz		38.2	75	pF
C _{oss}	Output Capacitance			14.4	28	
C _{rss}	Reverse Transfer Capacitance			6	12	
t _{d(on)}	Turn-On Time	V _{DD} =10V, R _L =10Ω, I _D =0.5A, V _{GS} =4.5V, R _G =10Ω		5	10	ns
t _r				3.5	7	
t _{d(off)}	Turn-Off Time			14	28	
t _f				6	12	

Typical Performance Characteristics

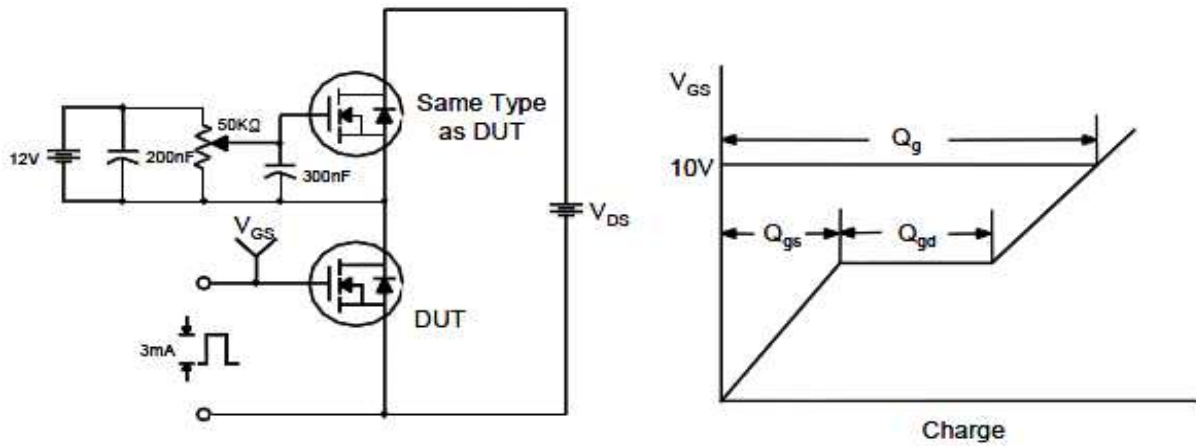


Typical Performance Characteristics (continue)

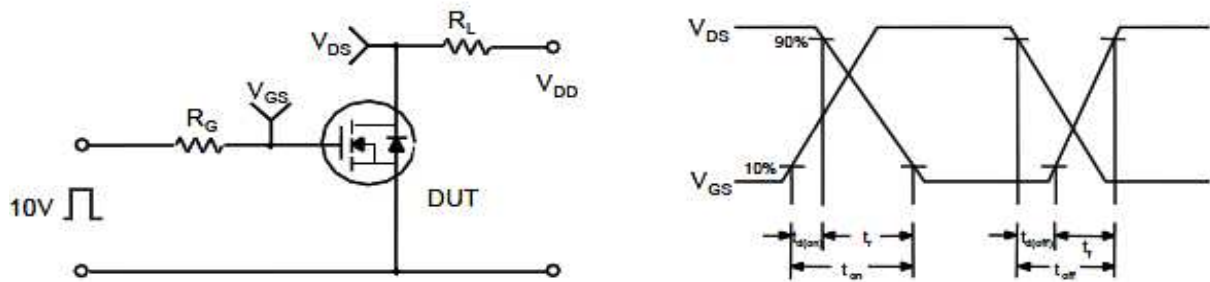


Typical Performance Characteristics (continue)

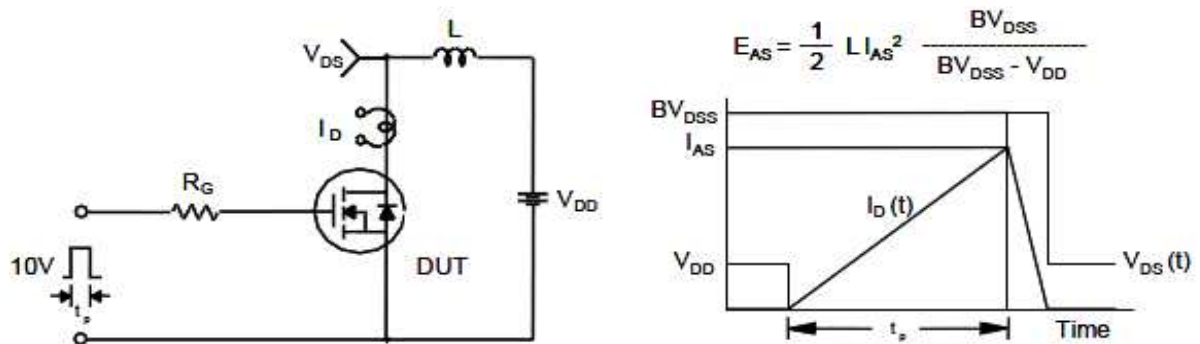
Gate Charge Test Circuit & Waveform



Resistive Switching Test Circuit & Waveforms

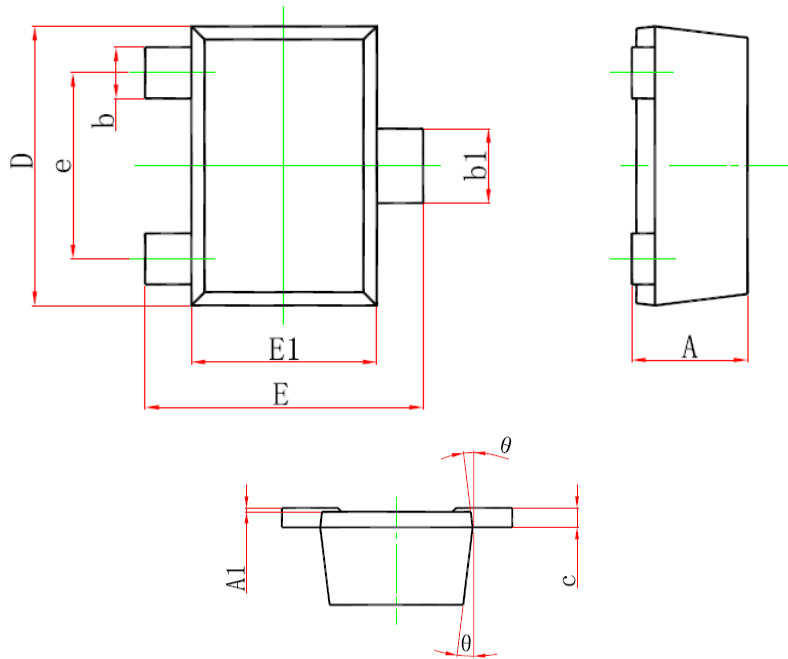


Unclamped Inductive Switching Test Circuit & Waveforms



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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