

SI1308EDL-T1-GE3 pin to pin fully compatible

**Features**

$BV_{DSS}$	30V
$R_{DS(ON)}$	150m $\Omega$
$I_D$	1.4A

**Application**

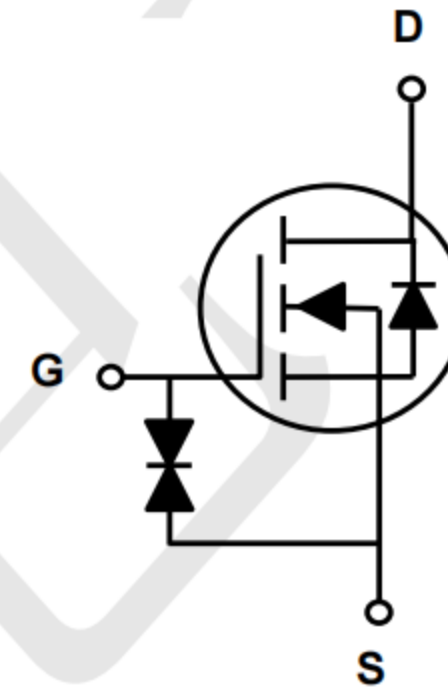
- Load/Power Switching
- Interfacing Switching
- Battery Management for Ultra Small Portable Electronics
- Logic Level Shift

**Package and Pin Configuration**



SOT323

**Circuit diagram**



**Marking:KGY**

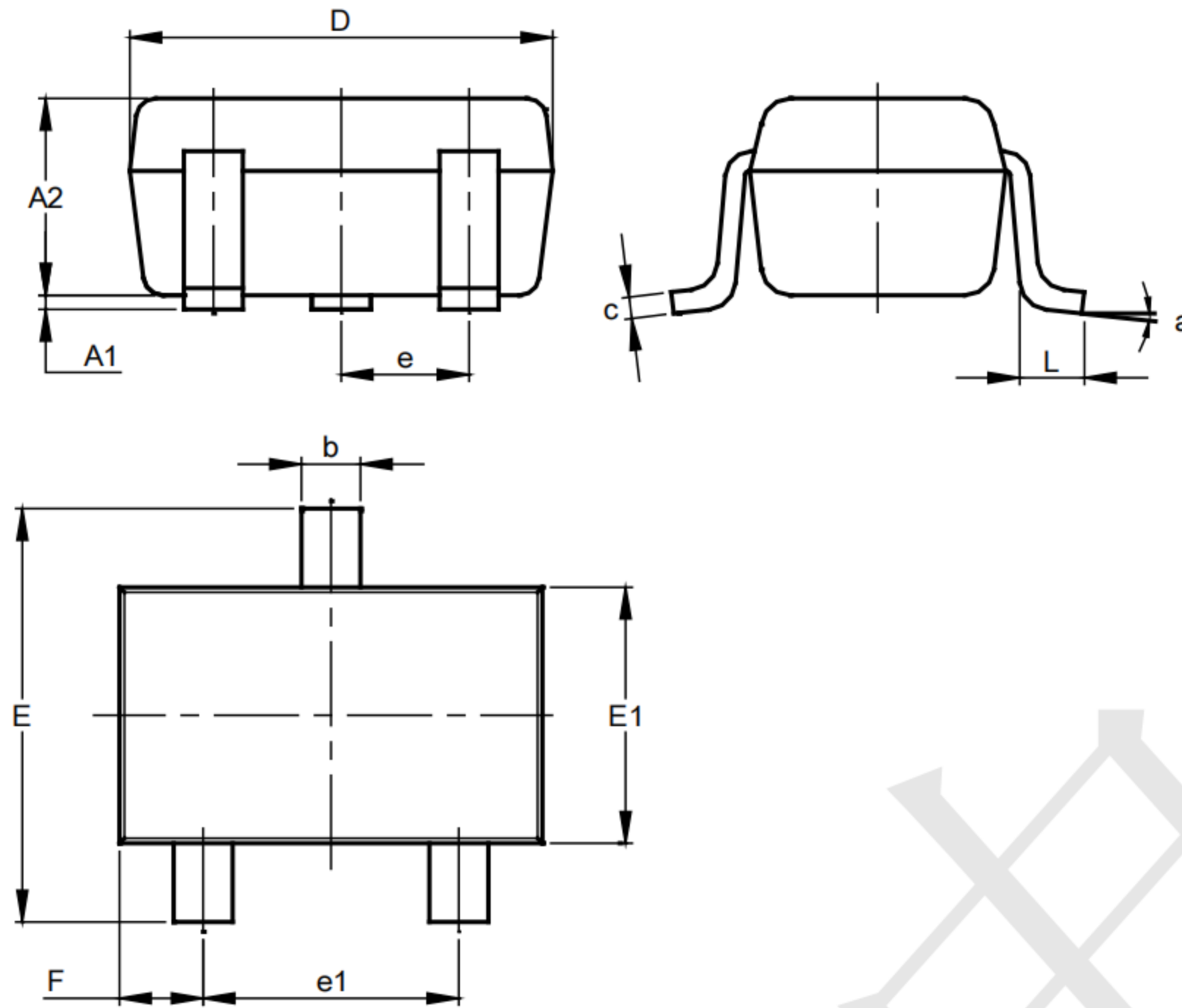
**Absolute Maximum Ratings ( $T_A=25^\circ\text{C}$  unless otherwise noted)**

Parameter	Symbol	Max.	Unit
Drain-Source Voltage	$V_{DS}$	30	V
Gate-Source Voltage	$V_{GS}$	$\pm 12$	V
Drain Current-Continuous( $T_C=25^\circ\text{C}$ )	$I_D$	1.4	A
Drain Current-Pulsed <sup>1</sup>	$I_{DM}$	6	A
Power Dissipation( $T_C=25^\circ\text{C}$ )	$P_D$	360	mW
Power Dissipation-Derate Above $25^\circ\text{C}$		1.25	mW/ $^\circ\text{C}$
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 (  $T_A = 25^\circ\text{C}$  unless otherwise noted )**

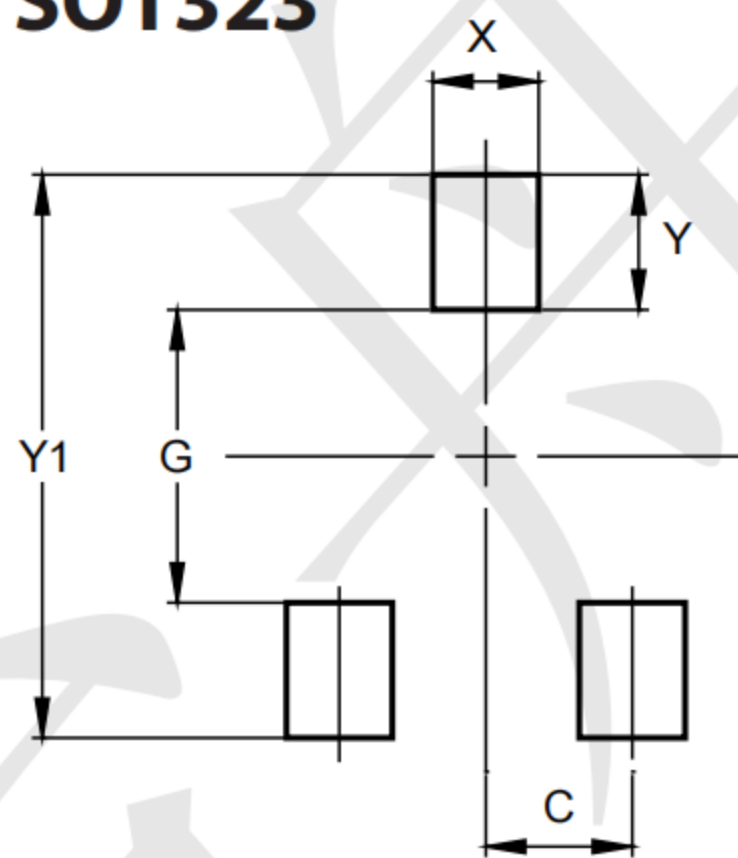
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
<b>Off Characteristics</b>						
Drain-Source Breakdown Voltage	$BV_{DSS}$	$V_{GS}=0V, I_D=250\mu A$	30	-	-	V
$BV_{DSS}$ Temperature Coefficient	$\Delta BV_{DSS}/\Delta T_J$	Reference to $25^\circ\text{C}$ , $I_D=1mA$	-	-0.03	-	$V/^\circ\text{C}$
Drain-Source Leakage Current	$I_{DSS}$	$V_{DS}=30V, V_{GS}=0V,$ $T_J=25^\circ\text{C}$	-	-	1	$\mu A$
		$V_{DS}=24V, V_{GS}=0V,$ $T_J=125^\circ\text{C}$	-	-	10	$\mu A$
Gate-Source Leakage Current	$I_{GSS}$	$V_{GS}=\pm 12V, V_{DS}=0V$	-	-	$\pm 20$	$\mu A$
<b>On Characteristics</b>						
Static Drain-Source On-Resistance	$R_{DS(ON)}$	$V_{GS}=4.5V, I_D=0.5A$	-	150	200	m $\Omega$
		$V_{GS}=2.5V, I_D=0.5A$	-	200	300	
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	0.5	0.8	1.5	V
$V_{GS(th)}$ Temperature Coefficient	$\Delta V_{GS(th)}$		-	-1.74	-	$mV/^\circ\text{C}$
Forward Transconductance	$g_{FS}$	$V_{DS}=4V, I_D=0.3A$	-	1	-	S
<b>Dynamic and Switching Characteristics</b>						
Total Gate Charge <sup>2,3</sup>	$Q_g$	$V_{DS}=15V, I_D=0.3A,$ $V_{GS}=4.5V$	-	2.6	5.2	nC
Gate-Source Charge <sup>2,3</sup>	$Q_{gs}$		-	0.9	1.8	
Gate-Drain Charge <sup>2,3</sup>	$Q_{gd}$		-	0.6	1.2	
Turn-On Delay Time <sup>2,3</sup>	$t_{d(on)}$	$V_{DD}=15V, R_G=10\Omega$ $V_{GS}=4.5V, I_D=0.3A$	-	5.5	11	nS
Rise Time <sup>2,3</sup>	$t_r$		-	4	8	
Turn-Off Delay Time <sup>2,3</sup>	$t_{d(off)}$		-	14.5	29	
Fall Time <sup>2,3</sup>	$t_f$		-	6.5	13	
Input Capacitance	$C_{iss}$	$V_{DS}=15V, V_{GS}=0V,$ $F=1MHz$	-	100	146	PF
Output Capacitance	$C_{oss}$		-	18.3	36.6	
Reverse Transfer Capacitance	$C_{rss}$		-	7.4	14.8	
<b>Drain-Source Diode Characteristics and Maximum Ratings</b>						
Continuous Source Current	$I_S$	$V_G=V_D=0V,$ Force Current	-	-	1.4	A
Pulsed Source Current	$I_{SM}$		-	-	6	
Diode Forward Voltage	$V_{SD}$	$V_{GS}=0V, I_S=0.2A,$ $T_J=25^\circ\text{C}$	-	-	1.2	V
Reverse Recovery Time	$T_{rr}$	$V_{GS}=0V, I_S=0.3A,$ $d_i/d_f=100A/\mu s,$	-	13	-	nS
Reverse Recovery Charge	$Q_{rr}$	$T_J=25^\circ\text{C}$	-	6	-	nC

**Outline Drawing - SOT323(SC70-3)**



SOT323			
Dim	Min	Max	Typ
A1	0.00	0.10	0.05
A2	0.90	1.00	0.95
b	0.25	0.40	0.30
c	0.10	0.18	0.11
D	1.80	2.20	2.15
E	2.00	2.20	2.10
E1	1.15	1.35	1.30
e	0.650 BSC		
e1	1.20	1.40	1.30
F	0.375	0.475	0.425
L	0.25	0.40	0.30
a	0°	8°	--
All Dimensions in mm			

**Land Pattern - SOT323**



Dimensions	Value (in mm)
C	0.650
G	1.300
X	0.470
Y	0.600
Y1	2.500