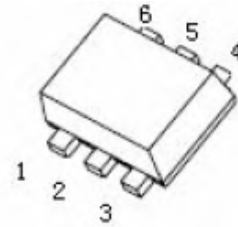
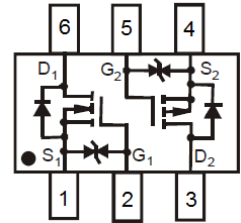


Main Product Characteristics

$V_{(BR)DSS}$	20V	-20V
$R_{DS(on)}$	380mΩ@4.5V	520mΩ@-4.5V
	450mΩ@2.5V	700mΩ@-2.5V
	800mΩ@1.8V	950mΩ(TYP)@-1.8V
I_D	3.8A	-2.5A



SOT-563



Schematic Diagram

Features and Benefits

- Advanced MOSFET process technology
- Ideal for notebook, load switch, networking and hand-held devices
- Low on-resistance with low gate charge
- Fast switching and reverse body recovery



Description

The SX3439K utilizes the latest techniques to achieve high cell density, low on-resistance and high repetitive avalanche rating. These features make this device extremely efficient and reliable for use in high efficiency switch mode power supply and a wide variety of other applications.

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

Parameter	Symbol	Value	Unit
N-Ch MOSFET			
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	±12	V
Continuous Drain Current ¹	I_D	0.75	A
Pulsed Drain Current ($t_p=10\mu\text{s}$)	I_{DM}	1.8	A
P-Ch MOSFET			
Drain-Source Voltage	V_{DS}	-20	V
Gate-Source Voltage	V_{GS}	±12	V
Continuous Drain Current ¹	I_D	-0.66	A
Pulsed Drain Current ($t_p=10\mu\text{s}$)	I_{DM}	-1.2	A
Temperature and Thermal Resistance			
Thermal Resistance from Junction to Ambient ¹	$R_{\theta JA}$	833	$^{\circ}\text{C/W}$
Junction Temperature	T_J	150	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-55 to +150	$^{\circ}\text{C}$
Lead Temperature for Soldering Purposes(1/8" from case for 10 s)	T_L	260	$^{\circ}\text{C}$

N-Channel Electrical Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

N-Ch MOSFET						
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D =250μA	20	---	---	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =20V,V _{GS} = 0V	---	---	1	μA
Gate-Body Leakage Current	I _{GSS}	V _{GS} =±12V, V _{DS} = 0V	---	---	±50	uA
Gate Threshold Voltage ²	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	0.35	---	1	V
Drain-Source On-Resistance ²	R _{DS(on)}	V _{GS} =4.5V, I _D =0.65A	---	---	380	mΩ
		V _{GS} =2.5V, I _D =0.55A	---	---	450	mΩ
		V _{GS} =1.8V, I _D =0.45A	---	---	800	mΩ
Forward Tranconductance ²	g _{FS}	V _{DS} =10V, I _D =0.8A	---	1.6	---	S
Diode Forward Voltage	V _{SD}	I _S =0.15A, V _{GS} = 0V	---	---	1.2	V
Dynamic Characteristics ⁴						
Input Capacitance	C _{iss}	V _{DS} =16V,V _{GS} =0V,f =1MHz	---	79	120	pF
Output Capacitance	C _{oss}		---	13	20	pF
Reverse Transfer Capacitance	C _{rss}		---	9	15	pF
Switching Characteristics ^{3,4}						
Turn-On Delay Time	t _{d(on)}	V _{GS} =4.5V,V _{DS} =10V, I _D =500mA,R _{GEN} =10Ω	---	6.7	---	ns
Turn-On Rise Time	t _r		---	4.8	---	ns
Turn-Off Delay Time	t _{d(off)}		---	17.3	---	ns
Turn-Off Fall Time	t _f		---	7.4	---	ns

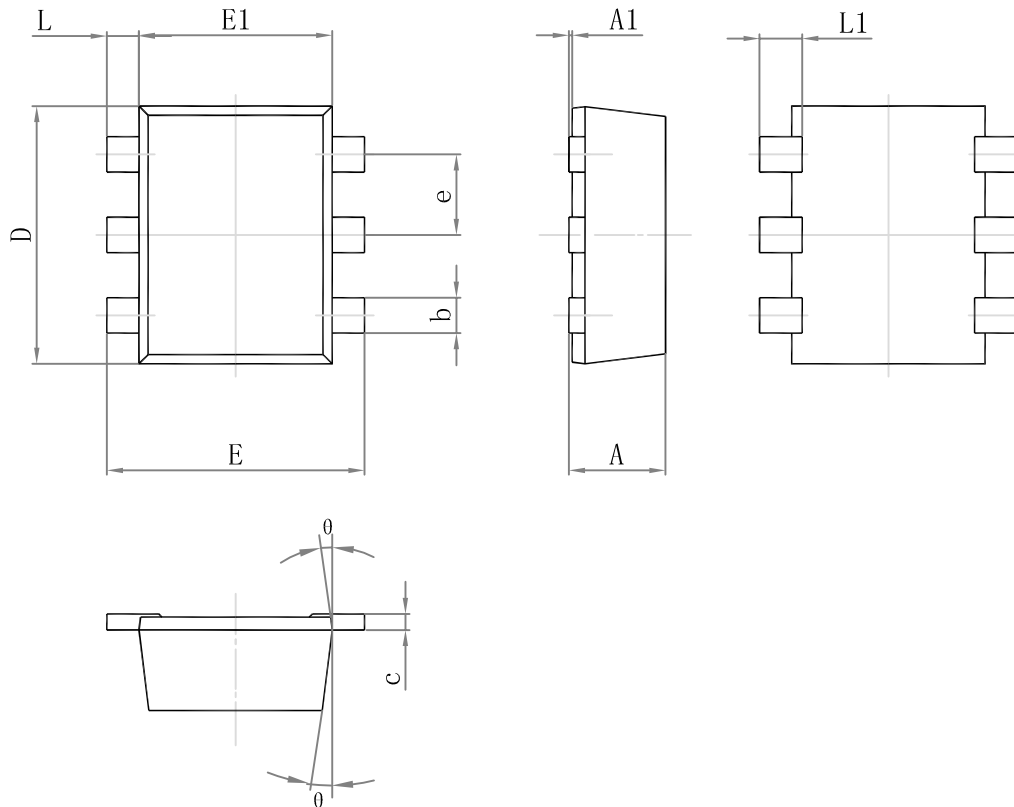
P-Channel Electrical Characteristics (T_A=25°C unless otherwise specified)

P-Ch MOSFET						
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D =-250μA	-20	---	---	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-20V, V _{GS} = 0V	---	---	-1	μA
Gate-Body Leakage Current	I _{GSS}	V _{GS} =±12V, V _{DS} = 0V	---	---	±20	uA
Gate Threshold Voltage ²	V _{GS(th)}	V _{DS} =V _{GS} , I _D =-250μA	-0.35	---	-1.1	V
Drain-Source On-Resistance ²	R _{DS(on)}	V _{GS} =-4.5V, I _D =-1A	---	---	520	mΩ
		V _{GS} =-2.5V, I _D =-0.8A	---	---	700	mΩ
		V _{GS} =-1.8V, I _D =-0.5A	---	---	950	mΩ
Forward Tranconductance ²	g _{FS}	V _{DS} =-10V, I _D =-0.54A	---	1.2	---	S
Diode Forward Voltage	V _{SD}	I _S =-0.5A, V _{GS} = 0V	---	---	-1.2	V
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} =-16V, V _{GS} =0V, f =1MHz	---	113	170	pF
Output Capacitance	C _{oss}		---	15	25	pF
Reverse Transfer Capacitance	C _{rss}		---	9	15	pF
Switching Characteristics ³						
Turn-On Delay Time	t _{d(on)}	V _{GS} =-4.5V, V _{DS} =-10V, I _D =-200mA, R _{GEN} =10Ω	---	9	---	ns
Turn-On Rise Time	t _r		---	5.8	---	ns
Turn-Off Delay Time	t _{d(off)}		---	32.7	---	ns
Turn-Off Fall Time	t _f		---	20.3	---	ns

Notes :

1. Surface mounted on FR4 board using the minimum recommended pad size.
2. Pulse Test : Pulse width=300μs, duty cycles≤2%.
3. Switching characteristics are independent of operating junction temperature.

Package Outline Dimensions SOT-563



Symbol	Dimensions In Millimeters		Dimensions in inches	
	Min.	Max.	Min.	Max.
A	0.525	0.600	0.021	0.024
A1	0.000	0.050	0.000	0.002
e	0.450	0.550	0.018	0.022
c	0.090	0.160	0.004	0.006
D	1.500	1.700	0.059	0.067
b	0.170	0.270	0.007	0.011
E1	1.100	1.300	0.043	0.051
E	1.500	1.700	0.059	0.067
L	0.100	0.300	0.004	0.012
L1	0.200	0.400	0.008	0.016
θ	7° REF.		7° REF.	

Order Information

Device	Package	Marking	Carrier	Quantity	HSF Status
SX3439K	SOT-563	49K	Tape & Reel	3000pcs/Reel	RoHS compliant