TECH PUBLIC
台舟电子

SI1029X

N- and P-Channel 60 V (D-S) MOSFET

www.sot23.com.tw

FEATURES

V_{DSS}	$R_{DS(on)}$ Typ	I_D Max
N–Channel 60 V	1.5 Ω @ 10 V	500 mA
	2.0 Ω @ 4.5 V	250 mA
P–Channel –60 V	2.5 Ω @ 10 V	500 mA
	3.0 Ω @ 4.5 V	200 mA

- ESD Protected 2KV HBM

APPLICATIONS

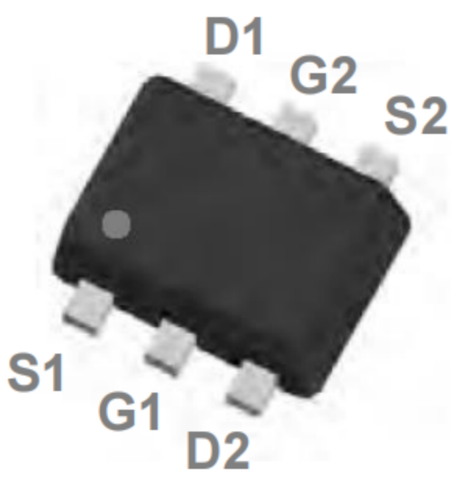
- Replace Digital Transistor, Level-Shifter
- Power Supply Converter Circuits
- Battery Operated Systems

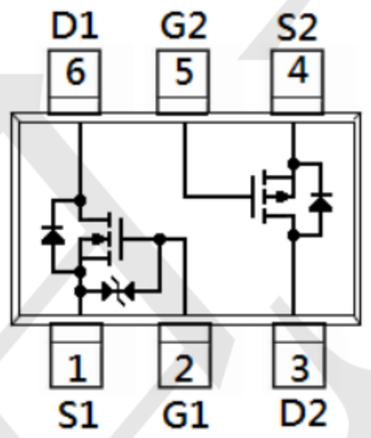
Ordering Information

- Case: SOT563
- Shipping Qty:3000/7inch Tape& Reel

Package and Pin Configuration

SOT563





Marking: HUQ

Absolute Maximum Ratings (T_A=25℃unless otherwise noted)

TECH PUBLIC PARAMETER		SYMBOL	N-Ch	P-Ch	UNITS
Drain-Source Voltage		V_{DS}	60	-60	V
Gate-Source Voltage		V_{GS}	±20	±20	V
Continuous Drain Current		I_D	360	-200	mA
Pulsed Drain Current (Note 4)		I_{DM}	1200	-900	mA
Power Dissipation	T_a=25°C	P_D	300		mW
	Derate above 25°C		2.4		mW/°C
Operating Junction and Storage Temperature Range		T_J,T_{STG}	-55~150		°C
Typical Thermal resistance - Junction to Ambient (Note 3)		$R_{\theta JA}$	417		°C/W

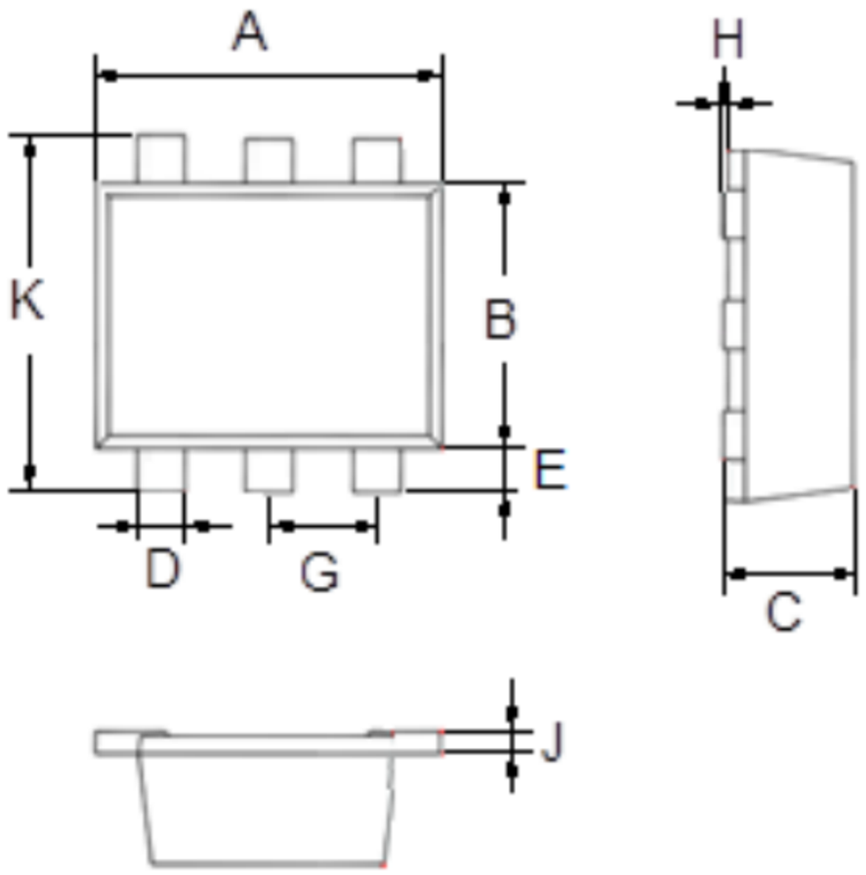
N-Channel Electrical Characteristics (T_A=25°C unless otherwise noted)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
Static						
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V, I_D= 250uA	60	-	-	V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D= 250uA	1.0	1.6	2.5	V
Drain-Source On-State Resistance	$R_{DS(on)}$	V_{GS}= 10V, I_D= 500mA	-	1.5	2.0	Ω
		V_{GS}= 4.5V, I_D= 250mA	-	2.0	3.0	
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}= 60V, V_{GS}=0V	-	-	1	uA
Gate-Source Leakage Current	I_{GSS}	V_{GS}=±20V, V_{DS}=0V	-	-	±10	uA
Dynamic (Note 5)						
Total Gate Charge	Q_g	V_{DS}=25V, I_D=500mA, V_{GS}=4.5V	-	0.95	-	nC
Gate-Source Charge	Q_{gs}		-	0.34	-	
Gate-Drain Charge	Q_{gd}		-	0.32	-	
Input Capacitance	Ciss	V_{DS}=25V, V_{GS}=0V, f=1.0MHZ	-	36	-	pF
Output Capacitance	Coss		-	11	-	
Reverse Transfer Capacitance	Crss		-	6.6	-	
Turn-On Delay Time	$td_{(on)}$	V_{DD}=25V, I_D=500mA, V_{GS}=10V, R_G=6Ω (Note 1,2)	-	2.3	-	ns
Turn-On Rise Time	tr		-	20	-	
Turn-Off Delay Time	$td_{(off)}$		-	7	-	
Turn-Off Fall Time	tf		-	20	-	
Drain-Source Diode						
Maximum Continuous Drain-Source Diode Forward Current	I_S	---	-	-	360	mA
Diode Forward Voltage	V_{SD}	I_S= 150mA, V_{GS}=0V	-	0.9	1.5	V

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

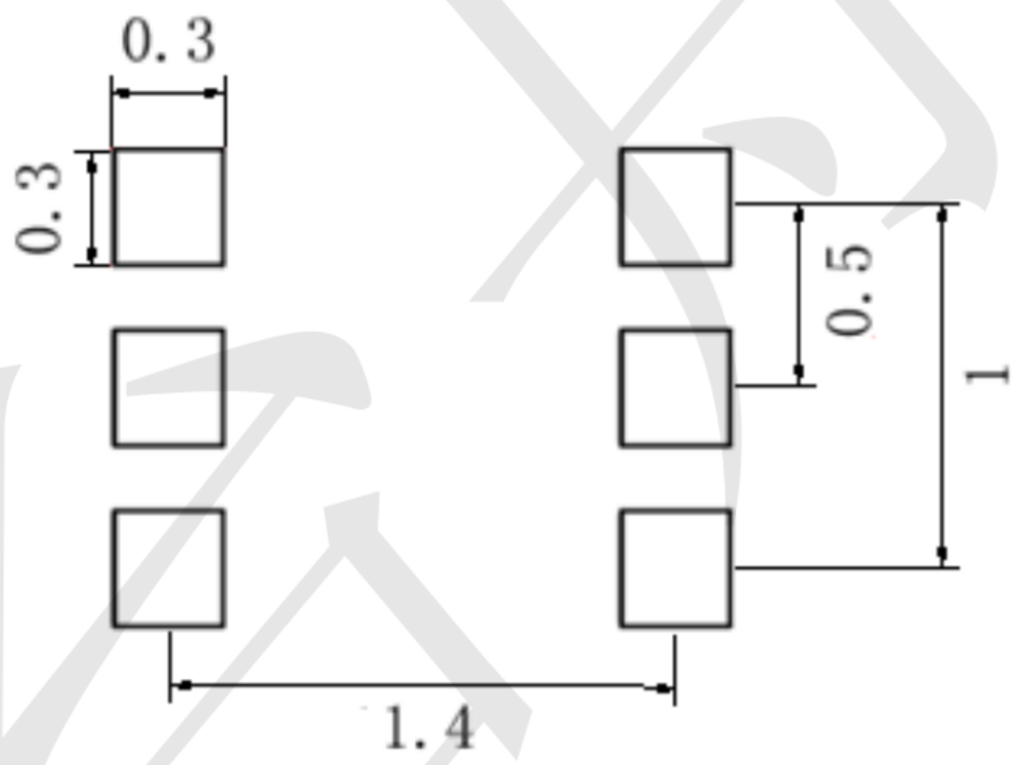
PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
Static						
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V,I_D=-250uA	-60	-	-	V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=-250uA	-1.0	-1.5	-2.5	V
Drain-Source On-State Resistance	$R_{DS(on)}$	V_{GS}=-10V,I_D=-500mA	-	2.5	6	Ω
		V_{GS}=-4.5V,I_D=-200mA	-	3.0	7	
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-48V,V_{GS}=0V	-	-	-1	uA
Gate-Source Leakage Current	I_{GSS}	V_{GS}=±20V,V_{DS}=0V	-	-	±100	nA
Dynamic (Note 5)						
Total Gate Charge	Q_g	V_{DS}=-25V, I_D=-100mA, V_{GS}=-4.5V	-	1.1	-	nC
Gate-Source Charge	Q_{gs}		-	0.3	-	
Gate-Drain Charge	Q_{gd}		-	0.2	-	
Input Capacitance	Ciss	V_{DS}=-25V, V_{GS}=0V, f=1.0MHZ	-	51	-	pF
Output Capacitance	Coss		-	15	-	
Reverse Transfer Capacitance	Crss		-	2.2	-	
Turn-On Delay Time	$td_{(on)}$	V_{DD}=-25V, I_D=-100mA, V_{GS}=-10V, R_G=6Ω (Note 1,2)	-	4.8	-	ns
Turn-On Rise Time	tr		-	19	-	
Turn-Off Delay Time	$td_{(off)}$		-	52	-	
Turn-Off Fall Time	tf		-	32	-	
Drain-Source Diode						
Maximum Continuous Drain-Source Diode Forward Current	I_S	---	-	-	-200	mA
Diode Forward Voltage	V_{SD}	I_S=-500mA, V_{GS}=0V	-	-0.9	-1.5	V

Outline Drawing - SOT563 (unit: mm)



SOT-563		
Dimension	**Min.**	**Max.**
A	1.500	1.700
B	1.100	1.300
C	0.525	0.600
D	0.170	0.270
E	0.100	0.300
G	0.450	0.550
H	0.000	0.050
J	0.090	0.160
K	1.500	1.700

Mounting Pad Layout-SOT563 (unit: mm)



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