Features

- Low RDS(on)
- Operated at Low Logic Level Gate Drive
- Epoxy Meets UL 94 V-0 Flammability Rating
- Moisture Sensitivity Level 1
- Halogen Free. “Green” Device (Note 1)
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

Dual N&P-Channel MOSFET

Maximum Ratings

- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature: -55°C to +150°C
- Thermal Resistance: 833 °C/W Junction to Ambient(Note 2)

N-Channel MOSFET

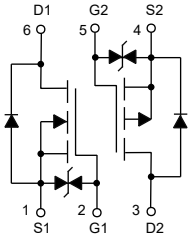
Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	±12	V
Drain Current-Continuous	I_D	0.75	A
Power Dissipation	P_D	1.8	W

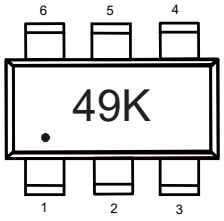
P-Channel MOSFET

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	-20	V
Gate-Source Voltage	V_{GS}	±12	V
Drain Current-Continuous	I_D	-0.66	A
Power Dissipation	P_D	1.2	W

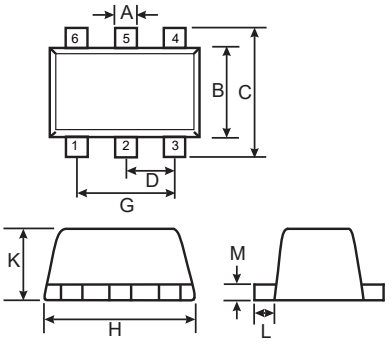
Note: 1. Halogen free "Green” products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
2. Surface mounted on FR4 board using the minimum recommended pad size.

Internal Structure and Marking Code





SOT-563



DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.006	0.011	0.15	0.30	
B	0.043	0.051	1.10	1.30	
C	0.059	0.067	1.50	1.70	
D	0.020		0.50		TYP.
G	0.035	0.043	0.90	1.10	
H	0.059	0.067	1.50	1.70	
K	0.022	0.026	0.55	0.65	
L	0.004	0.011	0.10	0.30	
M	0.004	0.007	0.10	0.18	

ELECTRICAL CHARACTERISTICS (Ta=25℃ unless otherwise specified)

N-Channel MOSFET

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V, I_D=250μA	20			V
Gate-Source Leakage Current	I_{GSS}	V_{DS}=0V, V_{GS}=±10V			±20	μA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=20V, V_{GS}=0V			1	μA
Gate-Threshold Voltage(Note 3)	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=250μA	0.35		1.0	V
Drain-Source On-Resistance(Note 3)	$R_{DS(on)}$	V_{GS}=4.5V, I_D=0.65A			0.38	Ω
		V_{GS}=2.5V, I_D=0.55A			0.45	Ω
		V_{GS}=1.8V, I_D=0.45A			0.80	Ω
Forward Tranconductance(Note 3)	g_{FS}	V_{DS}=10V, I_D=0.8A		1.6		S
Diode Forward Voltage	V_{SD}	V_{GS}=0V, I_S=0.15A			1.2	V
Dynamic Characteristics(Note 5)						
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(Note 4,5)						
Turn-On Delay Time	$t_{d(on)}$	V_{GS}=4.5V, V_{DS}=10V, I_D=500mA, R_{GEN}=10Ω		6.7		ns
Turn-Off Delay Time	$t_{d(off)}$			17.3		ns
Turn-on Rise Time	t_r			4.8		ns
Turn-off Fall Time	t_f			7.4		ns

Note:

3. Pulse Test : Pulse width=300μs, duty cycle≤2%.
4. Switching characteristics are independent of operating junction temperature.
5. Graranted by design， not subject to producting.

ELECTRICAL CHARACTERISTICS (Ta=25℃ unless otherwise specified)

P-Channel MOSFET

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V, I_D=250μA	-20			V
Gate-Source Leakage Current	I_{GSS}	V_{DS}=0V, V_{GS}=±10V			±20	μA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-20V, V_{GS}=0V			-1	μA
Gate-Threshold Voltage(Note 3)	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=250μA	-0.35		-1.1	V
Drain-Source On-Resistance(Note 3)	$R_{DS(on)}$	V_{GS}=-4.5V, I_D=-1.0A			0.52	Ω
		V_{GS}=-2.5V, I_D=-0.8A			0.70	Ω
		V_{GS}=-1.8V, I_D=-0.5A		0.95		Ω
Forward Tranconductance(Note 3)	g_{FS}	V_{DS}=-10V, I_D=-0.54A		1.2		S
Diode Forward Voltage	V_{SD}	V_{GS}=0V, I_S=-0.5A			-1.2	V
Dynamic Characteristics(Note 5)						
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(Note 4,5)						
Turn-On Delay Time	$t_{d(on)}$	V_{GS}=-4.5V, V_{DS}=-10V, I_D=-200mA, R_{GEN}=10Ω		9.0		ns
Turn-Off Delay Time	$t_{d(off)}$			32.7		ns
Turn-on Rise Time	t_r			5.8		ns
Turn-off Fall Time	t_f			20.3		ns

Note:

3. Pulse Test : Pulse width=300μs, duty cycle≤2%.
4. Switching characteristics are independent of operating junction temperature.
5. Graranted by design， not subject to producting.

Curve Characteristics(N-Channel MOSFET)

Fig. 1 - Output Characteristics

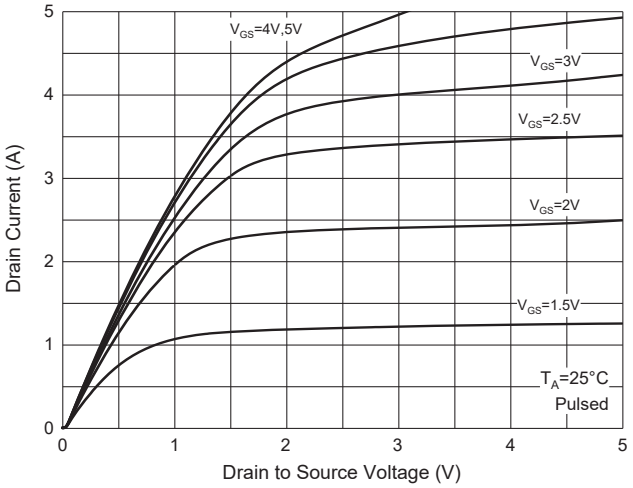


Fig. 2 - Transfer Characteristics

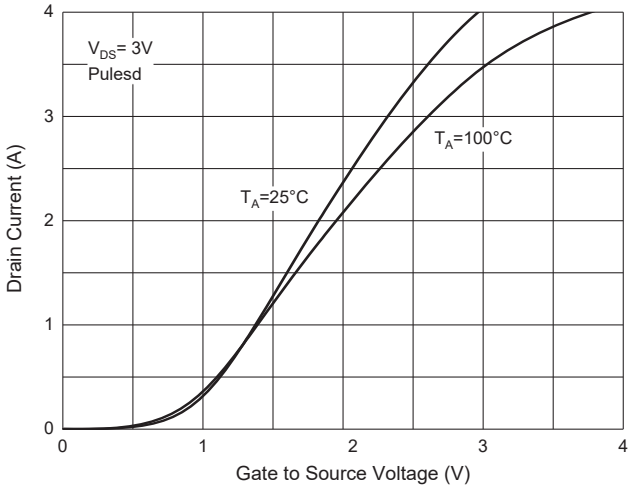


Fig. 3 - $R_{DS(ON)}$—I_D

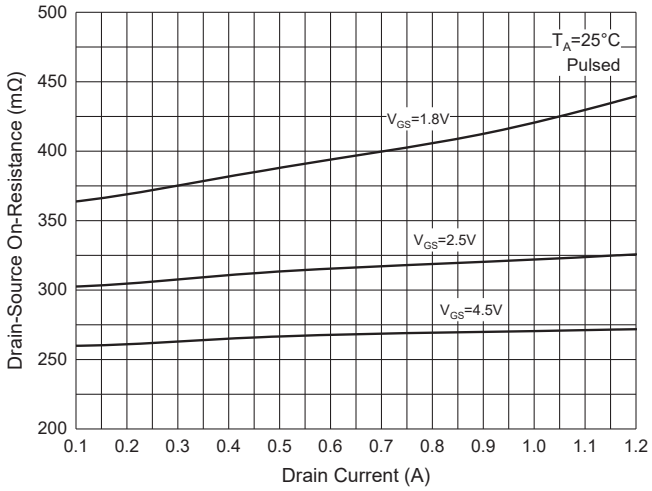


Fig. 4 - $R_{DS(ON)}$—V_{GS}

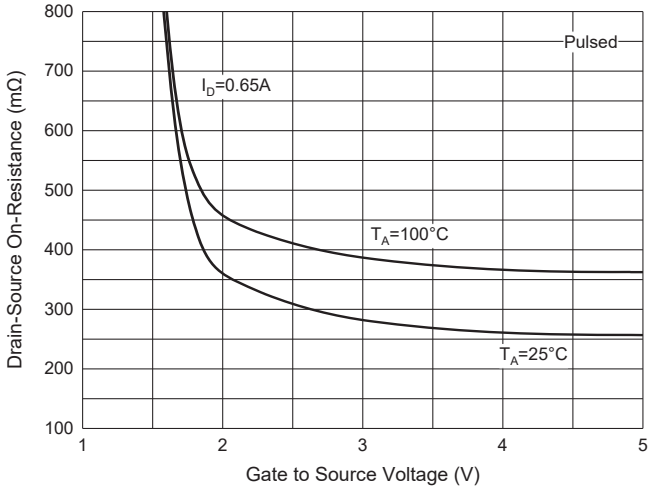


Fig. 5 - I_S—V_{SD}

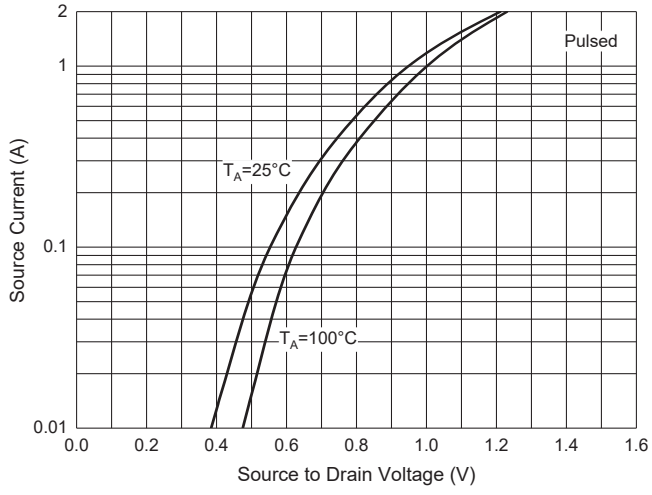
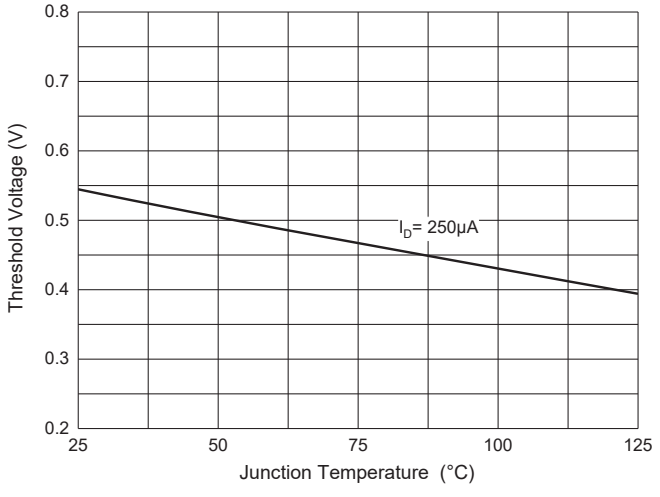


Fig. 6 - Threshold Voltage



Curve Characteristics(P-Channel MOSFET)

Fig. 1 - Output Charact eristics

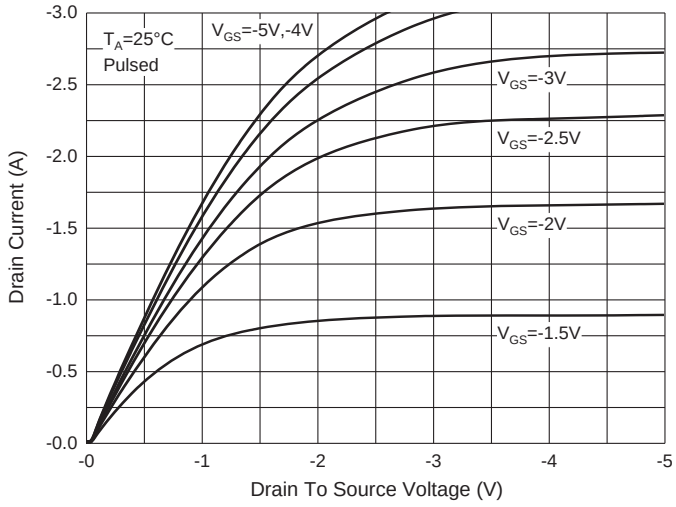


Fig. 2 - Transfer Characteristics

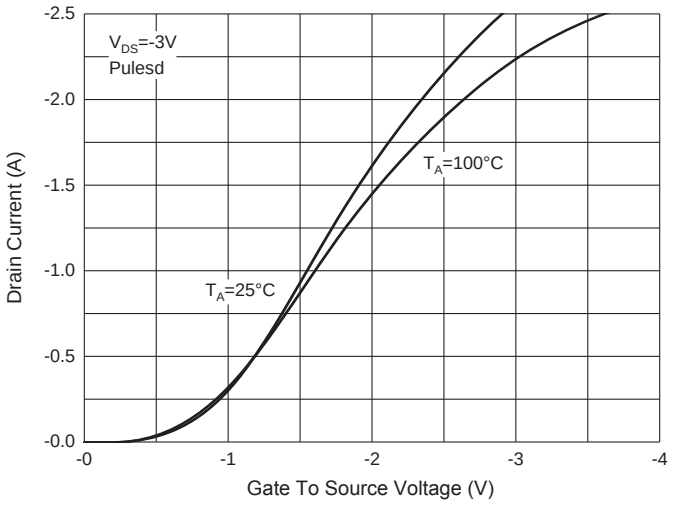


Fig. 3 - $R_{DS(ON)}$—I_D

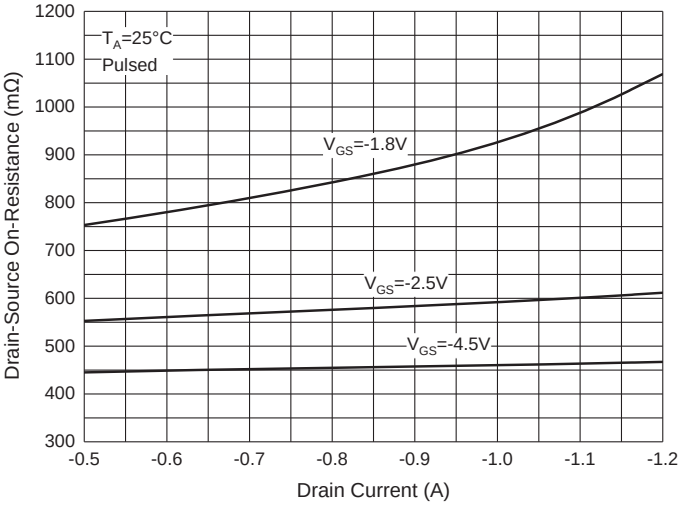


Fig. 4 - $R_{DS(ON)}$—V_{GS}

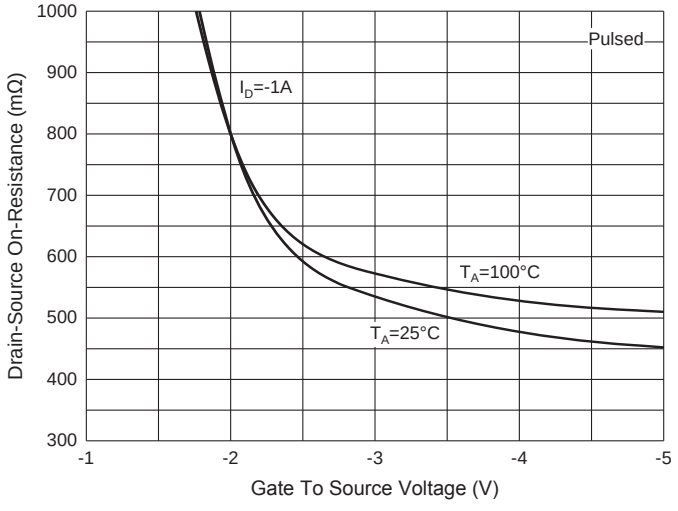


Fig. 5 - I_S—V_{SD}

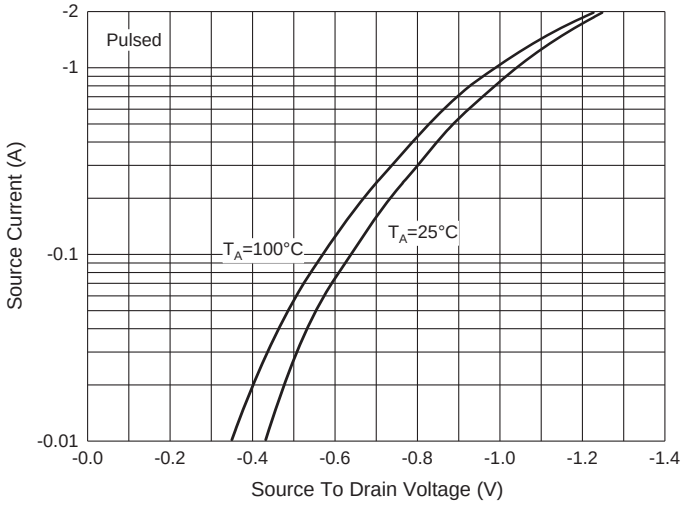
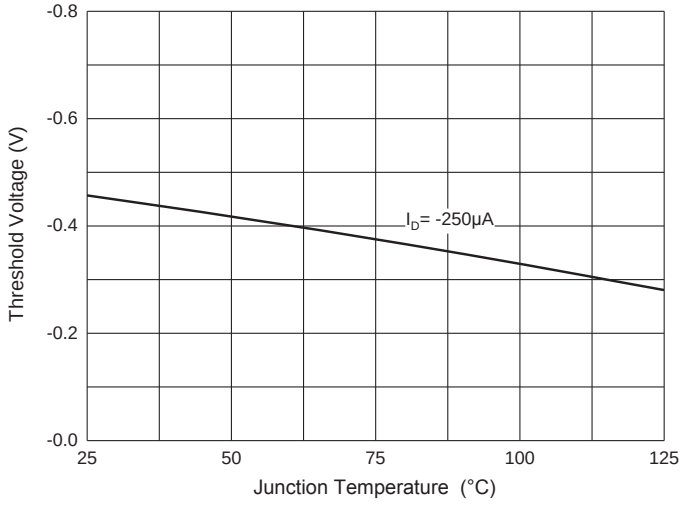


Fig. 6 - Threshold Voltage



Ordering Information

Device	Packing
SIX3439K-TP	Tape&Reel:3Kpcs/Reel
SIX3439K-TPA	Tape&Reel:8Kpcs/Reel(Note 6)

Note:
6. Change the pitch from 4mm to 2mm in tape&reel.