

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)

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

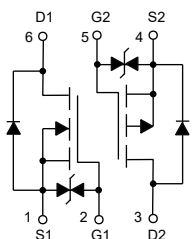
Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	±12	V
Drain Current-Continuous	I_D	0.75	A
Power Dissipation	P_D	1.8	W

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.

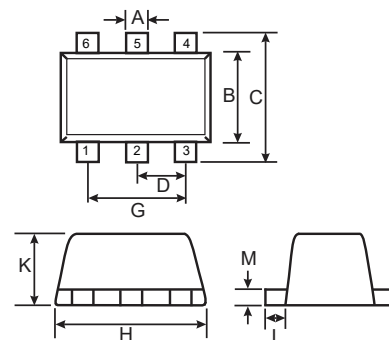
Internal Structure



Marking: 49K

Dual N&P-Channel MOSFET

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°C 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:

- Pulse Test : Pulse width=300 μ s, duty cycle $\leq$ 2%.
- Switching characteristics are independent of operating junction temperature.
- Garanted by design , not subject to producing.

ELECTRICAL CHARACTERISTICS (Ta=25°C 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:

- Pulse Test : Pulse width=300 μs , duty cycles $\leq 2\%$.
- Switching characteristics are independent of operating junction temperature.
- Granted by design, not subject to producing.

Curve Characteristics(N-Channel MOSFET)

Fig. 1 - Output Characteristics

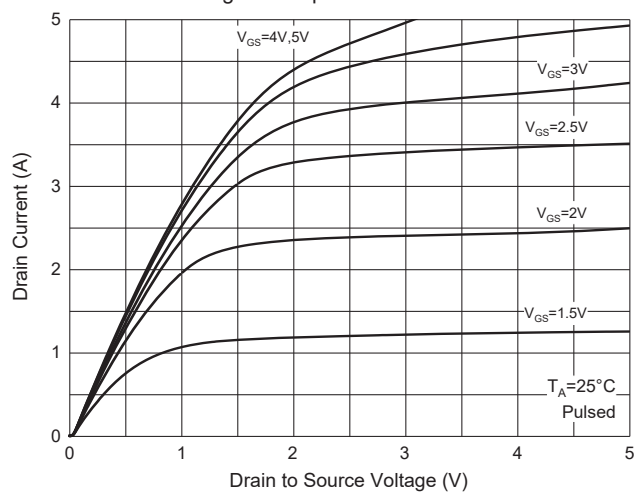


Fig. 2 - Transfer Characteristics

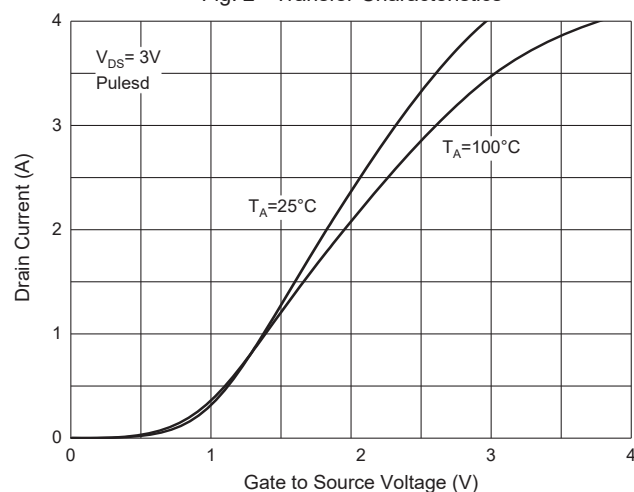


Fig. 3 - $R_{DS(ON)} - I_D$

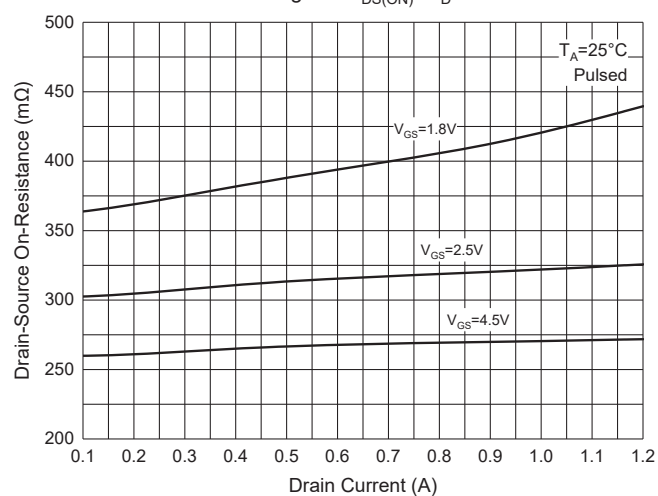


Fig. 4 - $R_{DS(ON)} - V_{GS}$

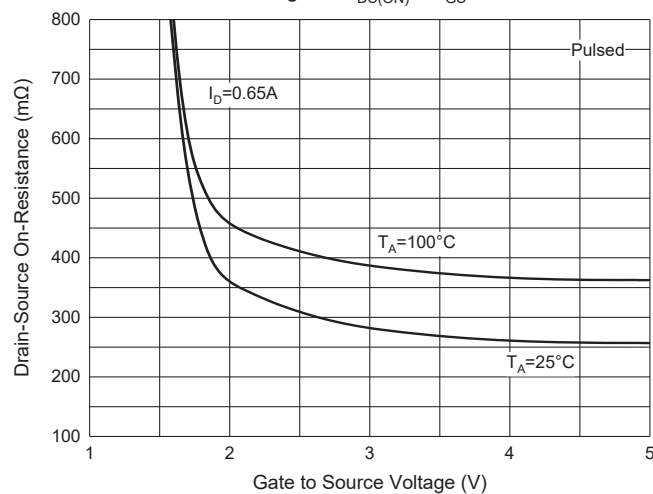


Fig. 5 - $I_S - V_{SD}$

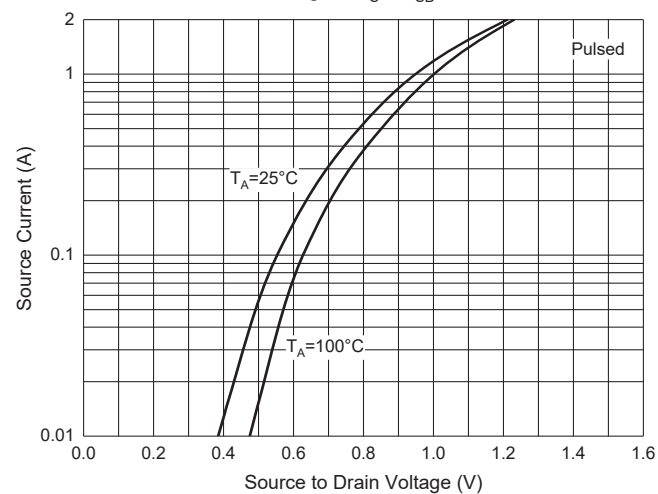
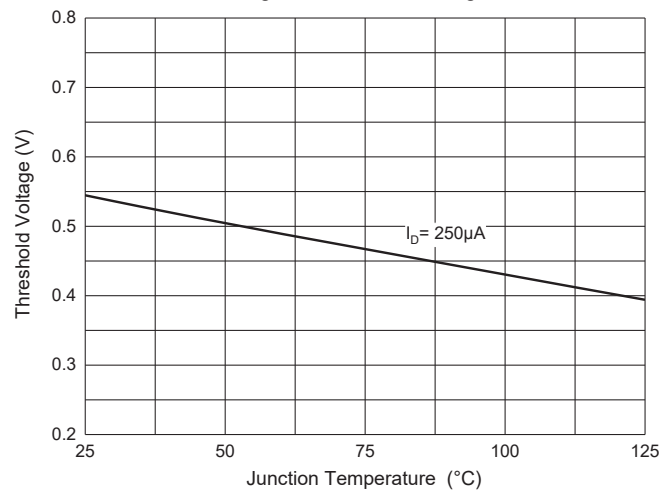


Fig. 6 - Threshold Voltage



Curve Characteristics(P-Channel MOSFET)

Fig. 1 - Output Characteristics

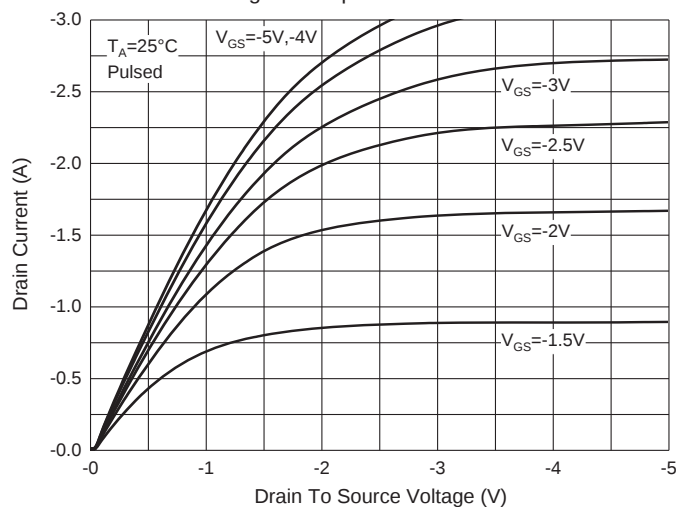


Fig. 2 - Transfer Characteristics

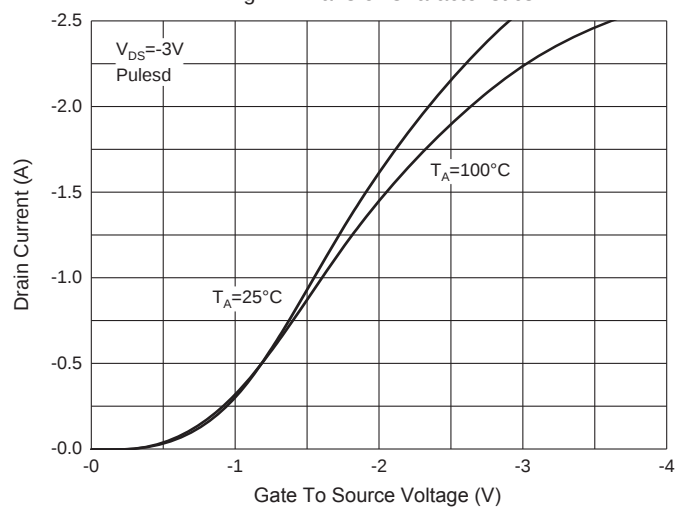


Fig. 3 - $R_{DS(ON)} - I_D$

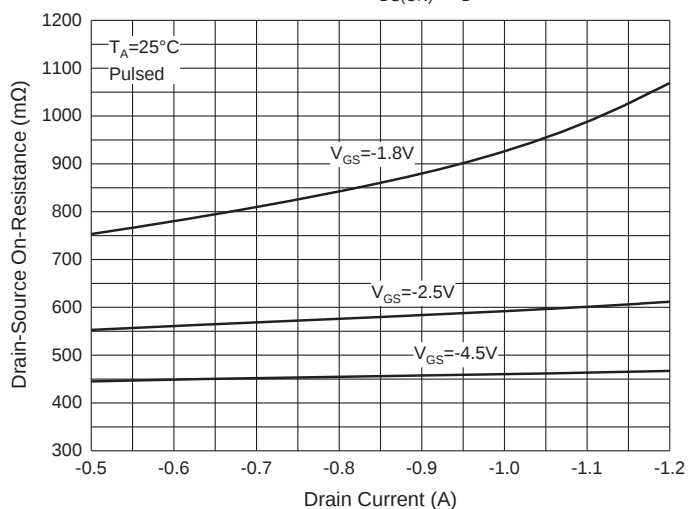


Fig. 4 - $R_{DS(ON)} - V_{GS}$

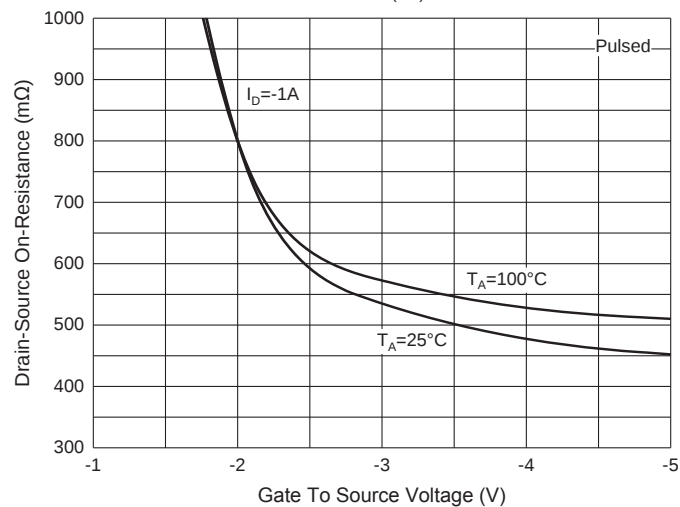


Fig. 5 - $I_S - V_{SD}$

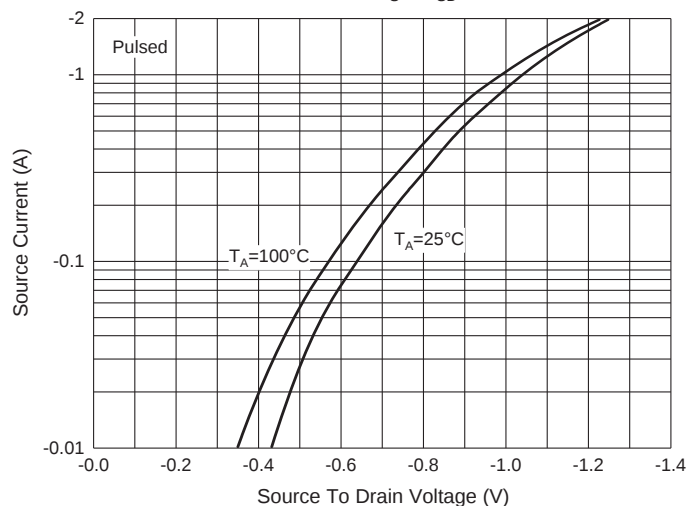
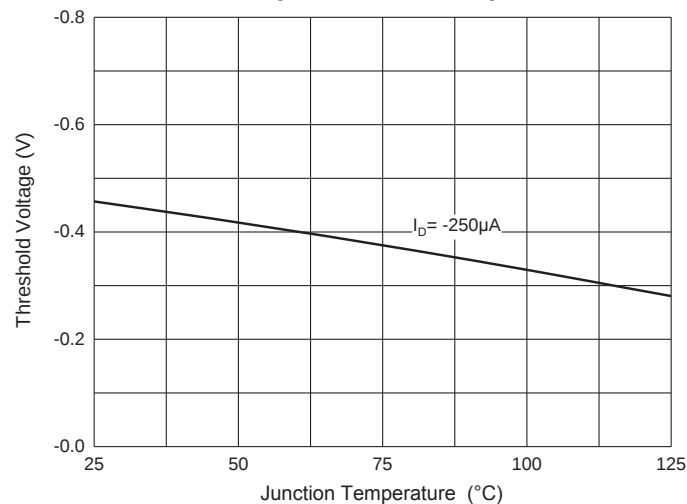


Fig. 6 - Threshold Voltage



Ordering Information

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

Note:

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

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