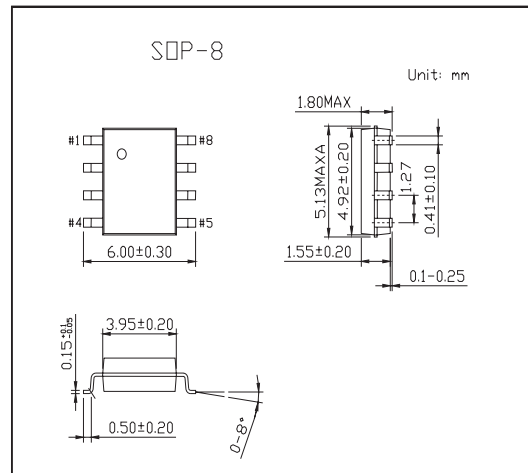
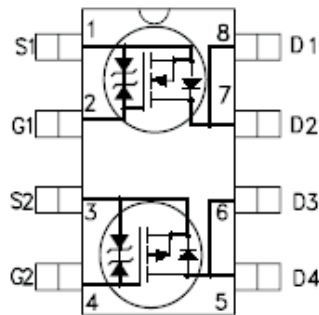


Mesh Overlay Power MOSFET

KTS1C1S250

■ Features

- Typical $R_{DS(on)}$ (N-Channel)= $0.9\ \Omega$
- Typical $R_{DS(on)}$ (P-Channel)= $2.1\ \Omega$
- Gate-source zener diode
- Standard outline for easy automated surface mount assembly

■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

Parameter	Symbol	N-Channel	P-Channel	Unit
Drain-Source Voltage ($V_{GS} = 0$)	V_{DS}	250	250	V
Drain-gate Voltage ($R_{GS} = 20\ \text{k}\ \Omega$)	V_{DGR}	250	250	
Gate-to-Source Voltage	V_{GS}	± 25		V
Continuous Drain Current, @ $T_c = 25^\circ\text{C}$	I_D	0.75	0.60	A
Continuous Drain Current, @ $T_c = 100^\circ\text{C}$	I_D	0.47	0.38	
Pulsed Drain Current	I_{DM}	3	2.4	
Total Dissipation at $T_c = 25^\circ\text{C}$ Single Operation	P_{TOT}	1.6		W
Total Dissipation at $T_c = 25^\circ\text{C}$ Dual Operation		2		
Junction and Storage Temperature Range	T_J, T_{STG}	-65 to 150		$^\circ\text{C}$
Thermal Resistance Junction-ambient Max (Single Operating) (Dual Operating)	$R_{thj-amb}^*$	62.5 78		$^\circ\text{C}/\text{W}$

* Mounted on 0.5 in \square pad of 2oz. copper.

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■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit	
Drain-source Breakdown Voltage	V _{(BR)DSS}	I _D = 250 μA, V _{GS} = 0	N-Ch	250		V	
		I _D = 250 μA, V _{GS} = 0	P-Ch	250		V	
Zero Gate Voltage Drain Current (V _{GS} = 0)	I _{DSS}	V _{DS} = Max Rating V _{DS} = Max Rating, T _c = 125 °C	N-Ch		1	μA	
			P-Ch		1	μA	
			N-Ch		10	μA	
			P-Ch		10	μA	
Gate-body Leakage Current (V _{DS} = 0)	I _{GSS}	V _{GS} = ±20V	N-Ch		±10	μA	
			P-Ch		±10	μA	
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250 μA	N-Ch	2	3	4	V
		V _{DS} = V _{GS} , I _D = 250 μA	P-Ch	2	3	4	V
Static Drain-source On Resistance	R _{DS(on)}	V _{GS} = 10V, I _D = 0.40A	N-Ch		0.9	1.4	Ω
		V _{GS} = 10V, I _D = 0.30A	P-Ch		2.1	2.8	Ω
Input Capacitance	C _{iss}	N-Channel	N-Ch		325	pF	
			P-Ch		260	pF	
Output Capacitance	C _{oss}	V _{DS} = 25V, f = 1 MHz, V _{GS} = 0 P-Channel	N-Ch		51	pF	
			P-Ch		52	pF	
Reverse Transfer Capacitance	C _{rss}	V _{DS} = 25V, f = 1 MHz, V _{GS} = 0	N-Ch		24	pF	
			P-Ch		25.5	pF	
Gate Input Resistance	R _g	f=1 MHz Gate DC Bias=0 Test Signal Level=20mV Open Drain	N-Ch		6	Ω	
			P-Ch		6	Ω	
Turn-on Delay Time	t _{d(on)}	N-Channel V _{DD} =125V, I _D =1.5A, R _G =4.7 Ω, V _{GS} = 10V	N-Ch		9	ns	
			P-Ch		12	ns	
Rise Time	t _r	P-Channel V _{DD} =125V, I _D =1.5A, R _G =4.7 Ω, V _{GS} =10V	N-Ch		11	ns	
			P-Ch		22	ns	
Total Gate Charge	Q _g	N-Channel V _{DD} =200V, I _D =1.5A, V _{GS} = 10V	N-Ch		15	20	nC
			P-Ch		16	21	nC
Gate-Source Charge	Q _{gs}	P-Channel V _{DD} = 200V, I _D = 1.5A, V _{GS} = 10V	N-Ch		1.9	nC	
			P-Ch		1.4	nC	
Gate-Drain Charge	Q _{gd}	V _{DD} = 200V, I _D = 1.5A, V _{GS} = 10V	N-Ch		7	nC	
			P-Ch		7.6	nC	
Turn-off Delay Time	t _{d(off)}	N-Channel V _{DD} = 125V, I _D = 1.5A, R _G = 4.7 Ω, V _{GS} = 10V	N-Ch		31	ns	
			P-Ch		29.5	ns	
Fall Time	t _f	P-Channel V _{DD} = 200V, I _D = 1.5A, R _G = 4.7 Ω, V _{GS} = 10V	N-Ch		11	ns	
			P-Ch		7	ns	
Source-drain Current	I _{SD}		N-Ch		0.75	A	
			P-Ch		0.6	A	
Source-drain Current (pulsed) *1	I _{SDM}		N-Ch		3	A	
			P-Ch		2.4	A	

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■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Forward On Voltage *2	V _{SD}	I _{SD} = 3A, V _{GS} = 0	N-Ch		1.5	V
		I _{SD} = 3A, V _{GS} = 0	P-Ch		1.5	V
Reverse Recovery Time	t _{rr}	N-Channel I _{SD} = 0.8A, di/dt = 100A/μs, V _{DD} = 50V, T _j = 150°C	N-Ch		127	ns
			P-Ch		143	ns
Reverse Recovery Charge	Q _{rr}	P-Channel I _{SD} = 0.60A, di/dt = 100A/μs, V _{DD} = 40V, T _j = 150°C	N-Ch		450	nC
			P-Ch		806	nC
Reverse Recovery Current	I _{RRM}	I _{SD} = 0.60A, di/dt = 100A/μs, V _{DD} = 40V, T _j = 150°C	N-Ch		7	A
			P-Ch		11	A
Gate-Source Breakdown Voltage	BV _{GS0}	I _{GS} = ± 500 μA (Open Drain)		± 25		V

*1 Pulsed: Pulse duration = 300 μs, duty cycle 1.5 %.

*2 Pulse width limited by safe operating area