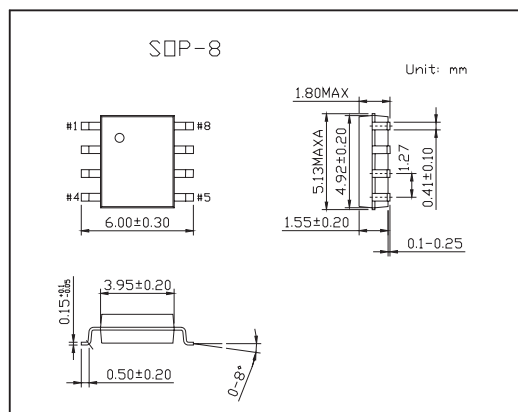
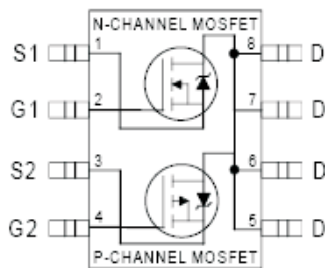


■ Features

- Generation V Technology
- Ultra Low On-Resistance
- Complimentary Half Bridge
- Surface Mount
- Fully Avalanche Rated



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

Parameter	Symbol	N-Channel	P-Channel	Unit
Drain-Source Voltage	V_{DS}	30	-30	V
Continuous Drain Current, $V_{GS} @ 10V @ T_a = 25^\circ\text{C}$	I_D	5.8	-4.3	A
Continuous Drain Current, $V_{GS} @ 10V @ T_a = 70^\circ\text{C}$	I_D	4.6	-3.4	
Pulsed Drain Current *1	I_{DM}	46	-34	
Power Dissipation @ $T_a = 25^\circ\text{C}$	P_D	2.5		W
Linear Derating Factor		0.02		W/ $^\circ\text{C}$
Gate-to-Source Voltage	V_{GS}	± 20		V
Peak Diode Recovery dv/dt *2	dv/dt	5.0	-5.0	V/ns
Junction and Storage Temperature Range	T_J, T_{STG}	-55 to + 150		$^\circ\text{C}$
Maximum Junction-to-Ambient *3	$R_{\theta JA}$	50		$^\circ\text{C}/\text{W}$

*1 Repetitive rating; pulse width limited by max. junction temperature.

*2 N-Channel $I_{SD} \leq 2.4A$, $di/dt \leq 73A/\mu s$, $V_{DD} \leq V_{(BR)DSS}$, $T_J \leq 150^\circ\text{C}$

P-Channel $I_{SD} \leq -1.8A$, $di/dt \leq 90A/\mu s$, $V_{DD} \leq V_{(BR)DSS}$, $T_J \leq 150^\circ\text{C}$

*3 Surface mounted on FR-4 board, $t \leq 10\text{sec}$.

■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Drain-to-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = 250 μA	N-Ch	30		V
		V _{GS} = 0V, I _D = 250 μA	P-Ch	-30		
Breakdown Voltage Temp. Coefficient	ΔV _{(BR)DSS} /ΔT _J	I _D = 1mA, Reference to 25°C	N-Ch		0.032	V/°C
		I _D = 1mA, Reference to 25°C	P-Ch		-0.037	
Static Drain-to-Source On-Resistance	R _{DS(on)}	V _{GS} = 10V, I _D = 5.8A*1	N-Ch	0.038	0.045	Ω
		V _{GS} = 4.5V, I _D = 4.9A*1		0.055	0.075	
Static Drain-to-Source On-Resistance	R _{DS(on)}	V _{GS} = -10V, I _D = -4.3A*1	P-Ch	0.070	0.090	
		V _{GS} = -4.5V, I _D = -3.7A*1		0.130	0.180	
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250 μA	N-Ch	1.0		V
		V _{DS} = V _{GS} , I _D = -250 μA	P-Ch	-1.0		
Forward Transconductance	g _{fs}	V _{DS} = 15V, I _D = 2.4A*1	N-Ch	5.2		S
		V _{DS} = -24V, I _D = -1.8A*1	P-Ch	2.5		
Drain-to-Source Leakage Current	I _{DSS}	V _{DS} = 24V, V _{GS} = 0V	N-Ch		1.0	μA
		V _{DS} = -24V, V _{GS} = 0V	P-Ch		-1.0	
		V _{DS} = 24V, V _{GS} = 0V, T _J = 125°C	N-Ch		25	
		V _{DS} = -24V, V _{GS} = 0V, T _J = 125°C	P-Ch		-25	
Gate-to-Source Forward Leakage	I _{GSS}	V _{GS} = ±20V	N-Ch		±100	
			P-Ch		±100	
Total Gate Charge	Q _g	N-Channel I _D = 2.4A, V _{DS} = 24V, V _{GS} = 10V	N-Ch		25	nC
Gate-to-Source Charge	Q _{gs}		P-Channel		25	
		Gate-to-Drain ("Miller") Charge	Q _{gd}	I _D = -1.8A, V _{DS} = -24V, V _{GS} = -10V	N-Ch	
P-Ch					2.9	
Turn-On Delay Time	t _{d(on)}	N-Channel V _{DD} = 15V, I _D = 2.4A, R _G = 6.0 Ω	N-Ch	6.8		ns
			P-Ch	11		
Rise Time	t _r	R _D = 6.2 Ω P-Channel	N-Ch	21		
			P-Ch	17		
Turn-Off Delay Time	t _{d(off)}	V _{DD} = -15V, I _D = -1.8A, R _G = 6.0 Ω R _D = 8.2 Ω	N-Ch	22		
			P-Ch	25		
Fall Time	t _f		N-Ch	7.7		
			P-Ch	18		
Internal Drain Inductance	L _D	Between lead, 6mm (0.25in.) from package and center of die contact	N-Ch	4.0		nH
			P-Ch	4.0		
Internal Source Inductance	L _S		N-Ch	6.0		
			P-Ch	6.0		
Input Capacitance	C _{iss}	N-Channel V _{GS} = 0V, V _{DS} = 25V, f = 1.0MHz	N-Ch	520		pF
			P-Ch	440		
Output Capacitance	C _{oss}	P-Channel	N-Ch	180		
			P-Ch	200		
Reverse Transfer Capacitance	C _{rss}	V _{GS} = 0V, V _{DS} = -25V, f = 1.0MHz	N-Ch	72		
			P-Ch	93		

■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Continuous Source Current (Body Diode)	Is		N-Ch		3.1	A
			P-Ch		-3.1	
Pulsed Source Current (Body Diode) *2	ISM		N-Ch		46	
			P-Ch		-34	
Diode Forward Voltage	VSD	TJ = 25°C, Is = 1.8A, VGS = 0V*1	N-Ch		1.0	V
		TJ = 25°C, Is = -1.8A, VGS = 0V*1	P-Ch		-1.0	
Reverse Recovery Time	trr	N-Channel TJ = 25°C, IF = 2.4A, di/dt = 100A/μs*1	N-Ch	47	71	ns
			P-Ch	53	80	
Reverse RecoveryCharge	Qrr	P-Channel TJ=25°C, IF=-1.8A, di/dt=-100A/μs*1	N-Ch	56	84	nC
			P-Ch	66	99	

*1 Pulse width ≤ 300 μs; duty cycle ≤ 2%.

*2 Repetitive rating; pulse width limited by max. junction temperature.