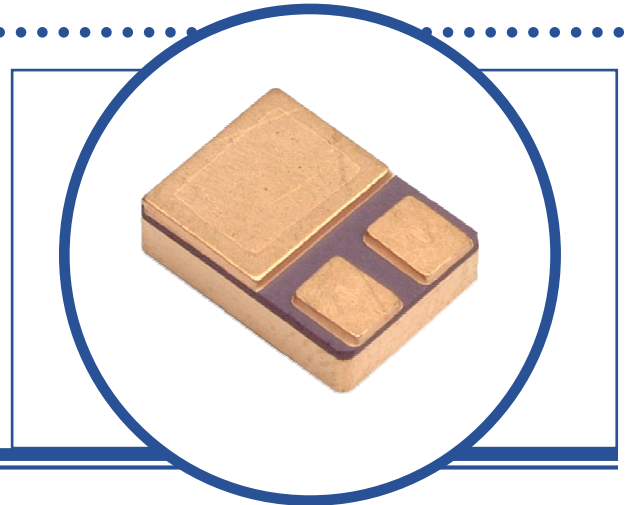


P-CHANNEL POWER MOSFET

SML6609ASMD05

- Electrically Isolated and Hermetically Sealed Surface Mount Package
- Ultra Low On State Resistance
- Fast Switching
- Low Gate Charge
- Screening Options Available



ABSOLUTE MAXIMUM RATINGS (T_{case} = 25°C unless otherwise stated)

V _{DS}	Drain – Source Voltage	-30V
V _{GS}	Gate – Source Voltage	±20V
I _D	Continuous Drain Current @ T _{case} = 25°C	-6.3A
I _{DM}	Pulsed Drain Current ¹	-40A
P _D	Total Power Dissipation @ T _{case} = 25°C	20W
	Linear De-rating Factor @ T _{case} ≥ 25°C	0.45W/°C
T _J , T _{stg}	Operating and Storage Temperature Range	-55°C to +150°C

THERMAL CHARACTERISTICS

Symbol	Parameters	Max	Units
R _{θJC}	Thermal Resistance, Junction To Case	1.8	°C/W
R _{θJPCB}	Thermal Resistance, Junction To PCB	6.25	°C/W

Notes:

- 1) Pulse width ≤ 300 μs; Duty Cycle ≤ 2%

P-CHANNEL POWER MOSFET SML6609ASMD05

ELECTRICAL CHARACTERISTICS (T_{case} = 25°C unless otherwise stated)

Symbol	Parameters	Test Conditions	Min	Typ	Max	Units
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} = 0 I _D = -250μA	-30			V
$\frac{\Delta BV_{DSS}}{\Delta T_j}$	Temperature Coefficient of Breakdown Voltage	Reference to 25°C I _D = -250μA		-0.022		V/°C
R _{DS(on)} ¹	Static Drain-Source On-State Resistance	V _{GS} = -10V I _D = -7A T _j = 125°C			0.04	Ω
		V _{GS} = -7.5V I _D = -5.5A			0.54	
V _{GS(th)}	Gate Threshold Voltage	V _{DS} = V _{GS} I _D = -250μA	-2.5		-4.5	V
$\frac{\Delta V_{GS(th)}}{\Delta T_j}$	Temperature Coefficient of Gate Threshold Voltage	Reference to 25°C I _D = -250μA		-0.004		V/°C
g _{fs} ¹	Forward Transconductance	V _{DS} = -10V I _D = -7A		14.5		S(Ω)
I _{DSS}	Drain-Source Leakage Current	V _{GS} = 0 V _{DS} = -24V			-3.0	μA
I _{GSS}	Forward Gate-Source Leakage	V _{GS} = -20V			-100	nA
I _{GSS}	Reverse Gate-Source Leakage	V _{GS} = 20V			100	
I _{D(on)}	On-State Drain Current	V _{GS} = -10V V _{DS} = -5V	-20			A

DYNAMIC CHARACTERISTICS

C _{iss}	Input Capacitance	V _{GS} = 0		1975		pF
C _{oss}	Output Capacitance	V _{DS} = -25V		315		
C _{rss}	Reverse Transfer Capacitance	f = 1.0MHz		160		
Q _g	Total Gate Charge	V _{GS} = -10V		46		nC
Q _{gs}	Gate-Source Charge	I _D = -7.2A		19		
Q _{gd}	Gate-Drain Charge	V _{DS} = -15V		11		
t _{d(on)}	Turn-On Delay Time	V _{DD} = -15V		20		ns
t _r	Rise Time	I _D = -1.0A		28		
t _{d(off)}	Turn-Off Delay Time	R _G = 6Ω		39		
t _f	Fall Time	V _{GS} = -10V		27		

SOURCE – DRAIN DIODE CHARACTERISTICS

I _S	Continuous Source Current				-2.1	A
V _{SD} ¹	Diode Forward Voltage	I _S = -2.1A V _{GS} = 0			-1.2	V

