

Product Summary

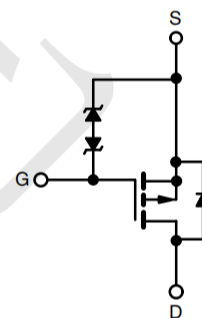
- 60V/-2.8A
 $R_{DS(ON)} = 100m\Omega$ (Typ) @ $V_{GS} = -10V$
- Typical ESD protection: 1500V

Application

- DC-DC Converters.
- Load Switch.
- Power Management.

Package and Pin Configuration

SOT-23



P-Channel MOSFET

Absolute Maximum Ratings ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Characteristic			Symbol	Value	Unit
Drain-Source Voltage			V _{DSS}	-60	V
Gate-Source Voltage			V _{GS}	±20	V
Continuous Drain Current	V _{GS} = -10V	T _C = 25 °C	I _D	-2.8	A
		T _C = 125 °C		-1.6	
Pulsed Drain Current			I _{DM}	-11	A
Continuous Source Current (Body Diode)			I _S	-2.5	A
Single Pulse Avalanche Current		L = 0.1 mH	I _{AS}	-13	A
Single Pulse Avalanche Energy			E _{AS}	8.4	A

Thermal Characteristics (@ $T_A = +25^\circ\text{C}$, unless otherwise specified.)

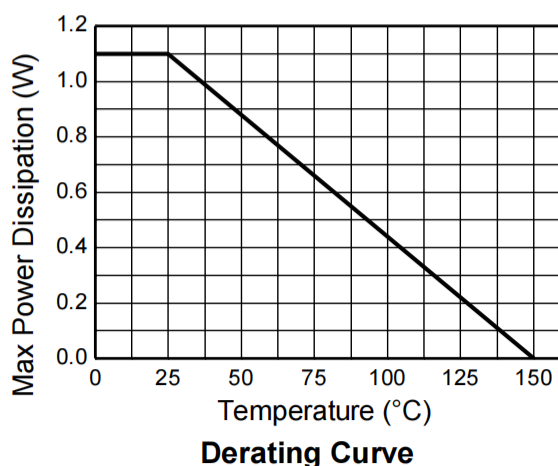
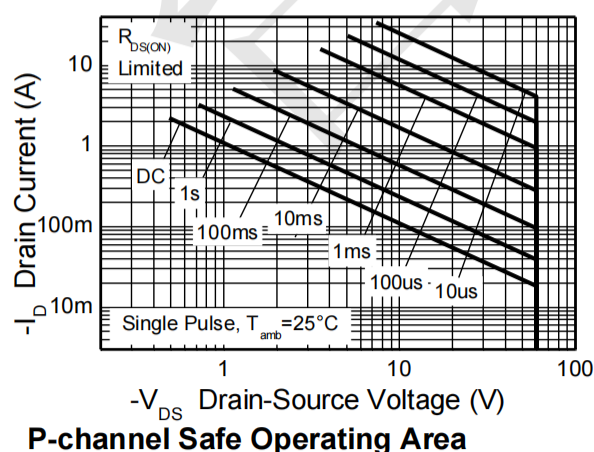
Characteristic		Symbol	Value	Unit
Maximum Power Dissipation ^a	$T_C = 25^\circ\text{C}$	P_D	2	W mW/°C
	$T_C = 125^\circ\text{C}$		0.67	
Junction-to-Ambient	PCB Mount	R_{thJA}	175	°C/W
Junction-to-Foot (Drafin)		R_{thJF}	75	
Operating and Storage Temperature Range		T_J, T_{STG}	-55 to +175	°C

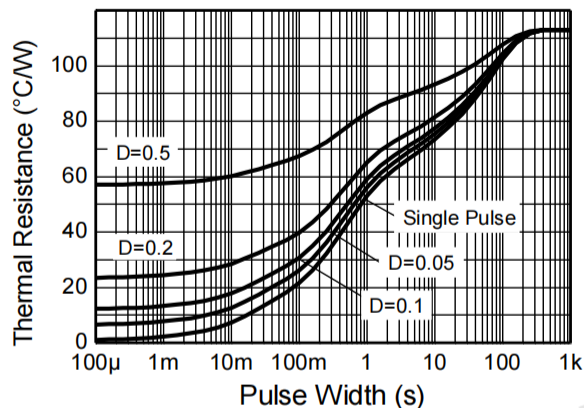
Electrical Characteristics ($T_A = 25^\circ\text{C}$ unless otherwise noted)

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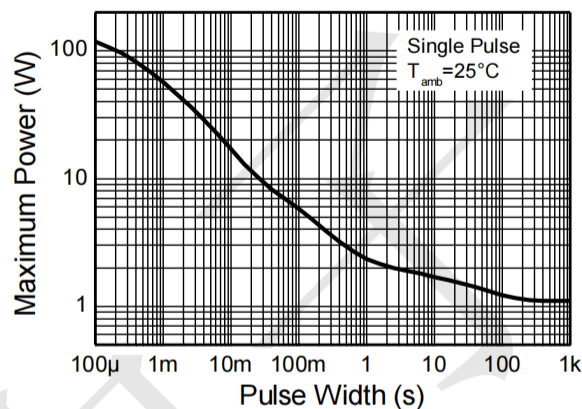
Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition	
OFF CHARACTERISTICS							
Drain-Source Breakdown Voltage	BV _{DSS}	-60	—	—	V	I _D = -250μA, V _{GS} = 0V	
Zero Gate Voltage Drain Current	I _{DSS}	—	—	-1	μA	V _{DS} = -48V, V _{GS} = 0V	
Gate-Source Leakage	I _{GSS}	—	—	±100	nA	V _{GS} = ±20V, V _{DS} = 0V	
ON CHARACTERISTICS							
Gate Threshold Voltage	V _{GS(th)}	-1	-1.7	-3	V	I _D = -250μA, V _{DS} = V _{GS}	
Static Drain-Source On-Resistance (Note 8)	R _{DS (ON)}	—	100	150	mΩ	V _{GS} = -10V, I _D = -3A	
			190	V _{GS} = -4.5V, I _D = -1.9A			
Forward Transconductance (Notes 8 & 9)	g _{fs}	—	4.7	—	S	V _{DS} = -15V, I _D = -2.3A	
Diode Forward Voltage (Note 8)	V _{SD}	—	-0.85	-0.95	V	I _S = -2A, V _{GS} = 0V	
Reverse Recovery Time (Note 9)	t _{rr}	—	25.1	—	ns	I _F = -1.7A, di/dt = 100A/μs	
Reverse Recovery Charge (Note 9)	Q _{rr}	—	27.2	—	nC		
DYNAMIC CHARACTERISTICS (Note 9)							
Input Capacitance	C _{iss}	—	637	—	pF	V _{DS} = -30V, V _{GS} = 0V f = 1MHz	
Output Capacitance	C _{oss}	—	70	—	pF		
Reverse Transfer Capacitance	C _{rss}	—	53	—	pF		
Total Gate Charge (Note 10)	Q _g	—	9.8	—	nC	V _{GS} = -5V	V _{DS} = -30V I _D = -2.3A
Total Gate Charge (Note 10)	Q _q	—	17.7	—	nC	V _{GS} = -10V	
Gate-Source Charge (Note 10)	Q _{gs}	—	1.6	—	nC		
Gate-Drain Charge (Note 10)	Q _{gd}	—	4.4	—	nC		
Turn-On Delay Time (Note 10)	t _{D(on)}	—	2.6	—	ns	V _{DD} = -30V, V _{GS} = -10V I _D = -1A, R _G ≅ 6Ω	
Turn-On Rise Time (Note 10)	t _r	—	3.4	—	ns		
Turn-Off Delay Time (Note 10)	t _{D(off)}	—	26.2	—	ns		
Turn-Off Fall Time (Note 10)	t _f	—	11.3	—	ns		

Typical Performance Characteristics ($T_A = 25^\circ\text{C}$ unless otherwise Specified)

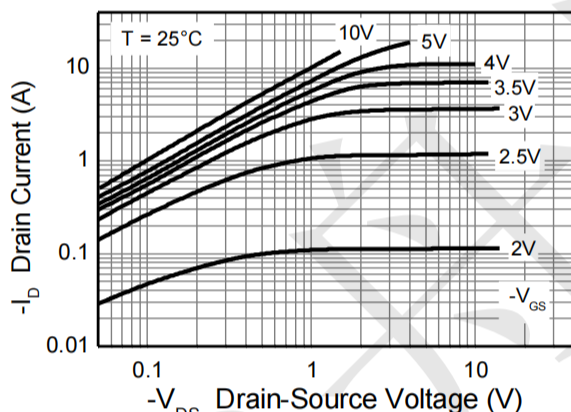




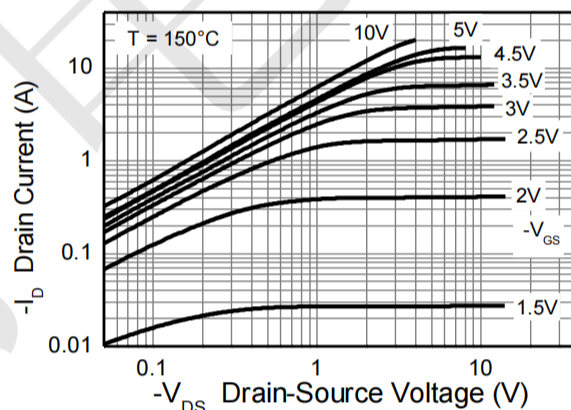
Transient Thermal Impedance



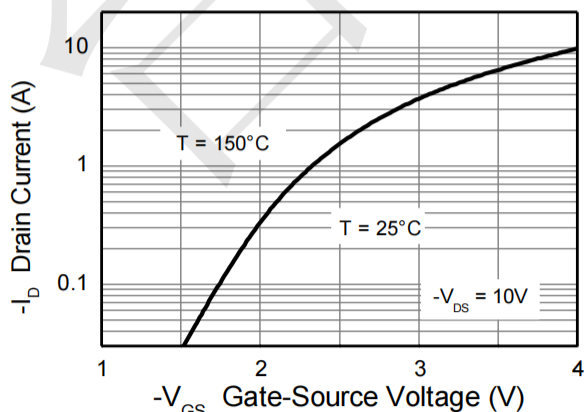
Pulse Power Dissipation



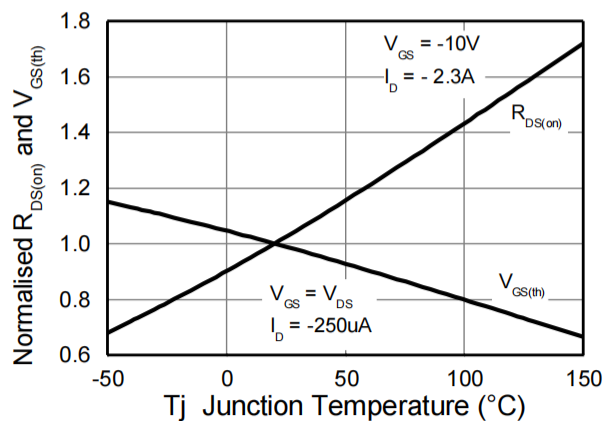
Output Characteristics



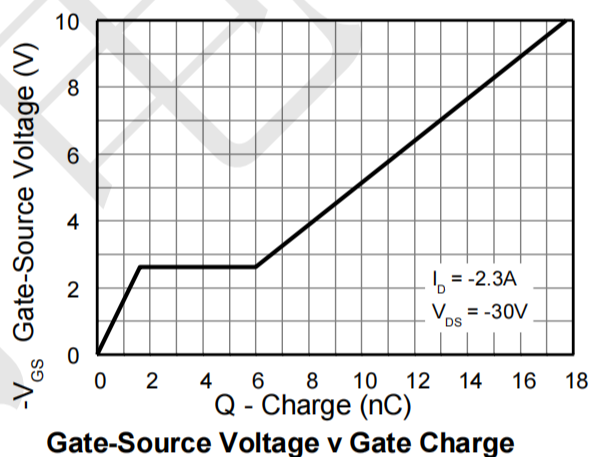
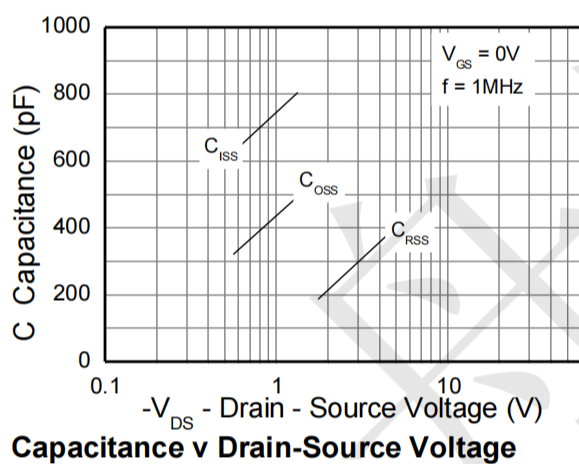
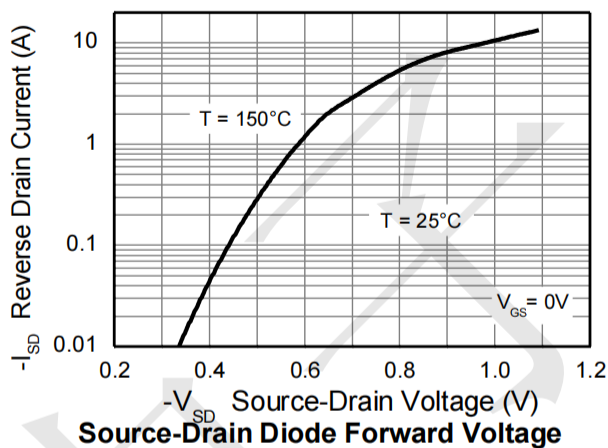
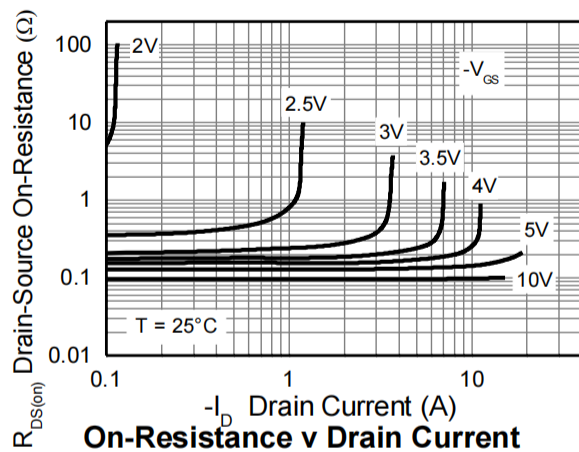
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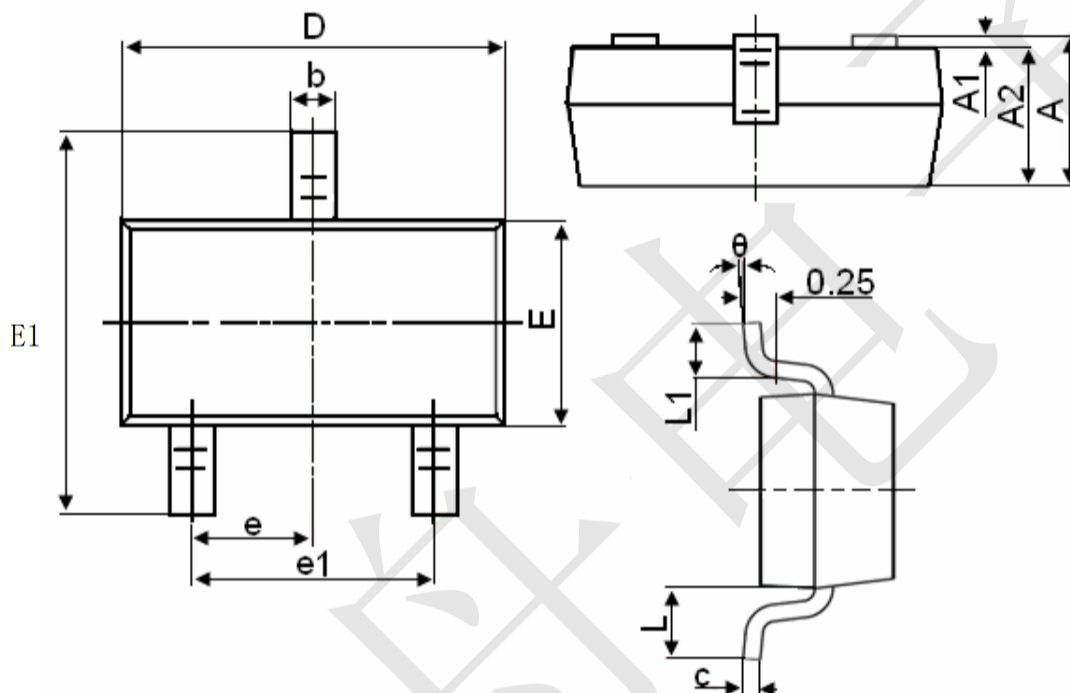
Typical Transfer Characteristics



Normalised Curves v Temperature



SOT-23 Package Information



Symbol	Dimensions in Millimeters	
	MIN.	MAX.
A	0.900	1.150
A1	0.000	0.100
A2	0.900	1.050
b	0.300	0.500
c	0.080	0.150
D	2.800	3.000
E	1.200	1.400
E1	2.250	2.550
e	0.950TYP	
e1	1.800	2.000
L	0.550REF	
L1	0.300	0.500
θ	0°	8°