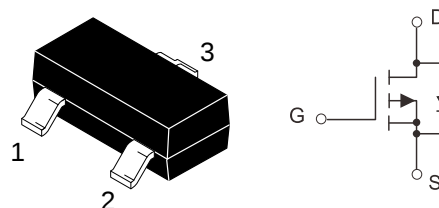


-30V/-1.9A P-Channel Advanced Power MOSFET

Product Summary

BVDSS	-30	V
ID	-1.9	A
RDSON@VGS=-10V	85.0	mΩ
RDSON@VGS=-4.5V	125.0	mΩ

SOT-23


Feature

- Trench Technology Power MOSFET
- Low $R_{DS(ON)}$
- Low Gate Charge
- Low Gate Resistance

Application

- DC/DC Converter
- Power Management

Order Information

Product	Package	Marking	Reel
M03P019D	SOT-23	S3	3000PCS

ABSOLUTE MAXIMUM RATINGS ($T_A = 25^{\circ}\text{C}$ unless otherwise noted)

Parameter		Symbol	Value	Unit
Drain - Source Voltage		V_{DS}	-30	V
Gate - Source Voltage		V_{GS}	± 20	V
Continuous Drain Current ^{1,5}	$T_A = 25^{\circ}\text{C}$	I_D	-1.9	A
Pulsed Drain Current ²		I_{DM}	-7.6	A
Power Dissipation ^{4,5}	$T_A = 25^{\circ}\text{C}$	P_D	0.63	W
Thermal Resistance from Junction to Ambient ⁵		$R_{\theta JA}$	200	$^{\circ}\text{C/W}$
Junction Temperature		T_J	150	$^{\circ}\text{C}$
Storage Temperature		T_{STG}	-55~ +150	$^{\circ}\text{C}$

-30V/-1.9A P-Channel Advanced Power MOSFET

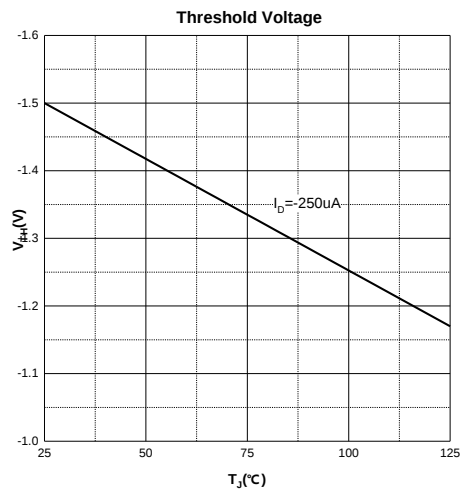
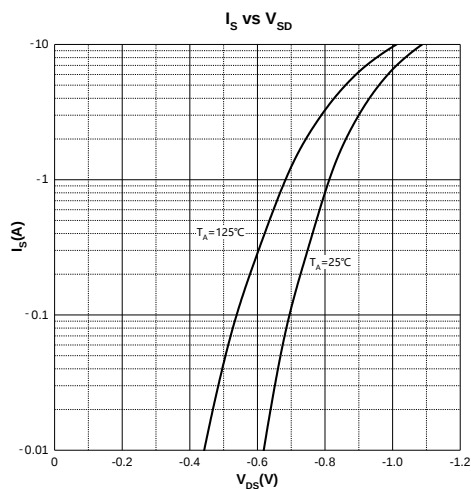
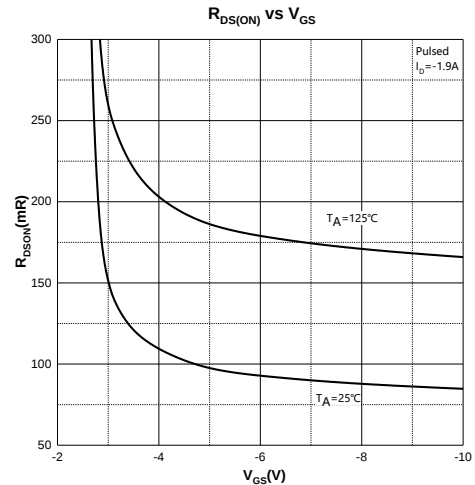
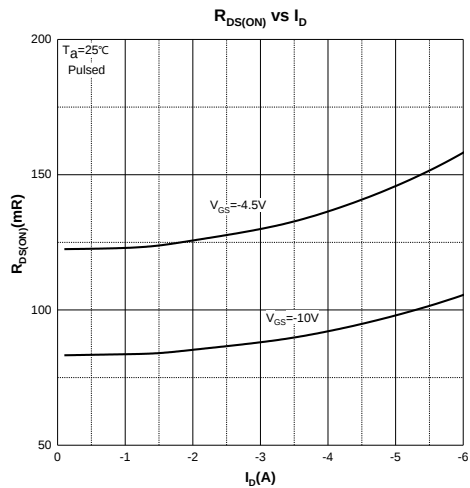
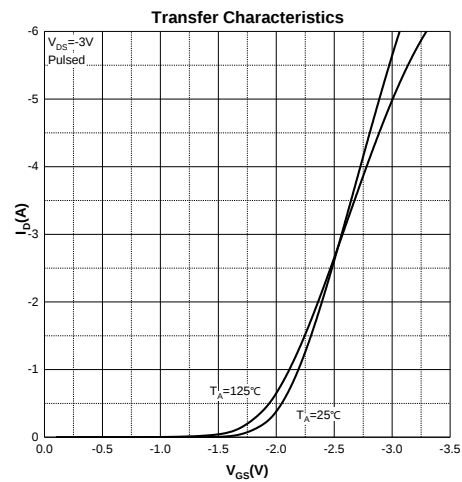
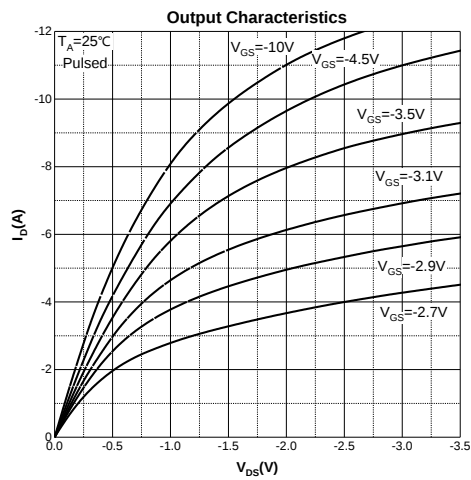
MOSFET ELECTRICAL CHARACTERISTICS ($T_J = 25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Off Characteristics						
Drain - Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = -250μA	-30			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = -24V, V _{GS} = 0V			-1	μA
Gate - Body Leakage Current	I _{GSS}	V _{GS} = ±20V, V _{DS} = 0V			±100	nA
On Characteristics ³						
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = -250μA	-1	-1.5	-3.0	V
Drain-source On-resistance	R _{DS(on)}	V _{GS} = -10V, I _D = -1.9A		85	150	mΩ
		V _{GS} = -4.5V, I _D = -1.4A		125	250	
Forward Transconductance	g _{FS}	V _{DS} = -5V, I _D = -1.9A	2			S
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} = -15V, V _{GS} = 0V, f = 1MHz		266		pF
Output Capacitance	C _{oss}			37		
Reverse Transfer Capacitance	C _{rss}			25		
Switching Characteristics						
Total Gate Charge	Q _g	V _{DS} = -15V, V _{GS} = -10V, I _D = -1.9A		5.8		nC
Gate-source Charge	Q _{gs}			3.2		
Gate-drain Charge	Q _{gd}			0.9		
Turn-on Delay Time	t _{d(on)}	V _{DD} = -15V, V _{GS} = -10V, R _L = 7.5Ω, R _G = 3Ω		6		ns
Turn-on Rise Time	t _r			4		
Turn-off Delay Ttime	t _{d(off)}			15		
Turn-off Fall Time	t _f			6		
Source - Drain Diode Characteristics						
Diode Forward Voltage ³	V _{SD}	V _{GS} = 0V, I _S = -1.5A			-1.2	V

Notes :

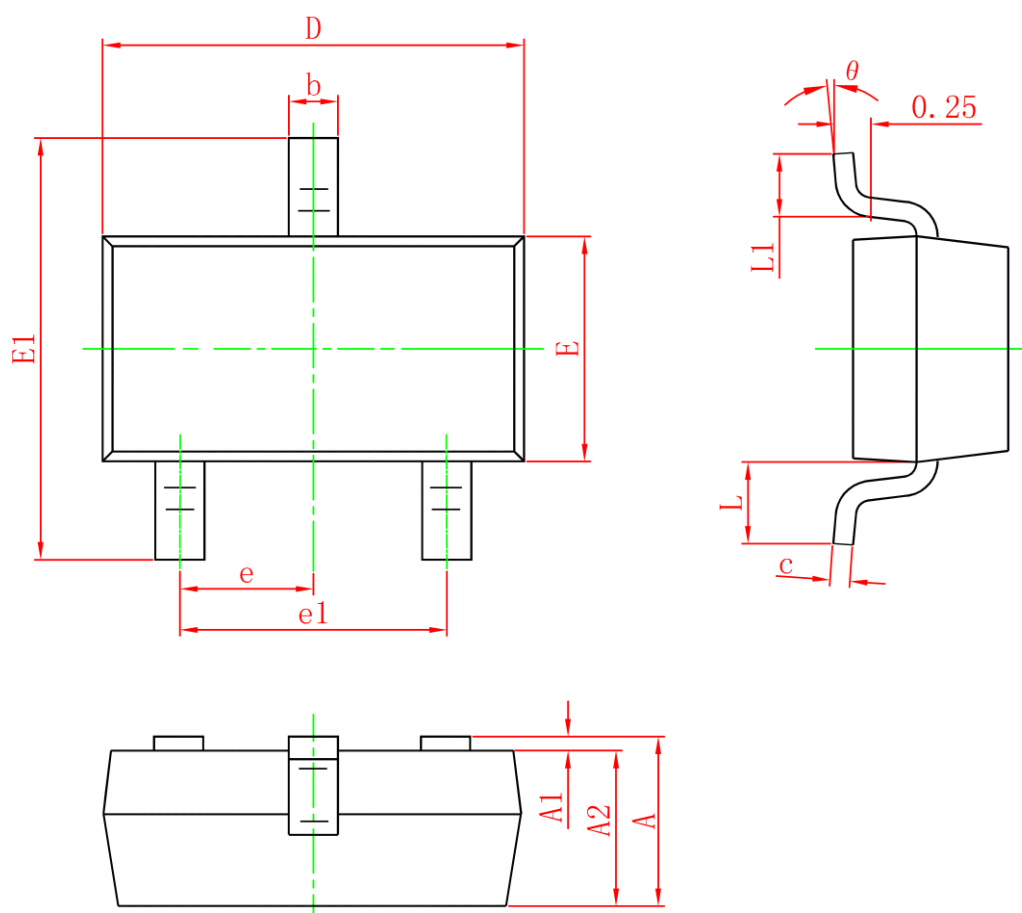
- 1.The maximum current rating is limited by Package.
- 2.Pulse Test : Pulse Width $\leq 10\mu s$, duty cycle $\leq 1\%$.
- 3.Pulse Test : Pulse Width $\leq 300\mu s$, duty cycle $\leq 2\%$.
- 4.The power dissipation P_D is limited by $T_{J(MAX)} = 150^\circ\text{C}$.
- 5.Device mounted on $1in^2$ FR-4 board with 2oz. Copper, in a still air environment with $T_A = 25^\circ\text{C}$.

-30V/-1.9A P-Channel Advanced Power MOSFET Typical Characteristics



-30V/-1.9A P-Channel Advanced Power MOSFET

SOT-23 Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.150	0.035	0.045
A1	0	0.100	0	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.150	1.500	0.045	0.059
E1	2.250	2.650	0.089	0.104
e	0.950TYP		0.037TYP	
e1	1.800	2.000	0.071	0.079
L	0.550REF		0.022REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°