

P-Channel Enhancement Mode Field Effect Transistor

- Features**

-20V/-2.8A

$R_{DS(ON)} < 110m\Omega @ V_{GS} = -4.5V$

$R_{DS(ON)} < 150m\Omega @ V_{GS} = -2.5V$

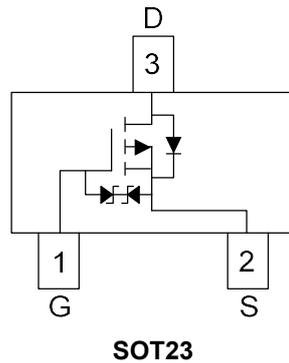
Super high density cell design for extremely low $R_{DS(ON)}$

Exceptional on-resistance and maximum DC current capability

- General Description**

These P-Channel enhancement mode field effect transistors are produced using high cell density, DMOS technology.

- Pin Configurations**



- Absolute Maximum Ratings**

@ $T_A = 25^\circ C$ unless otherwise noted

Parameter	Symbol	Ratings	Unit
Drain - Source Voltage	V_{DSS}	-20	V
Gate -Source Voltage	V_{GS}	± 8	V
Drain Current (Continuous)	I_D	-2.8	A
Drain Current (Pulse)	I_{DP}	-10	A
Power Dissipation	P_D	1.25	W
Operating Temperature	T_J	-55~150	$^\circ C$
Storage Temperature	T_{STG}	-55~150	$^\circ C$

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● Electrical Characteristics

@T_A=25°C unless otherwise noted

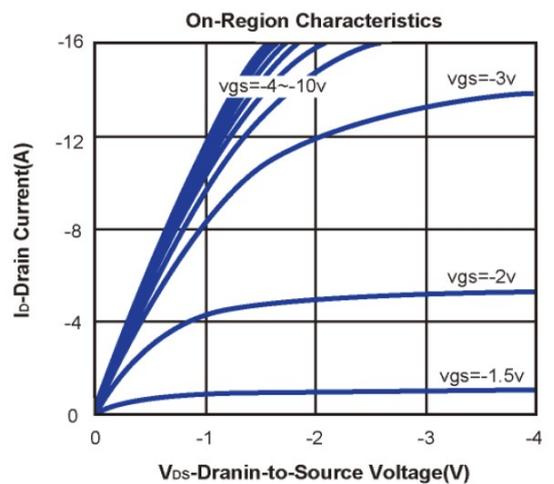
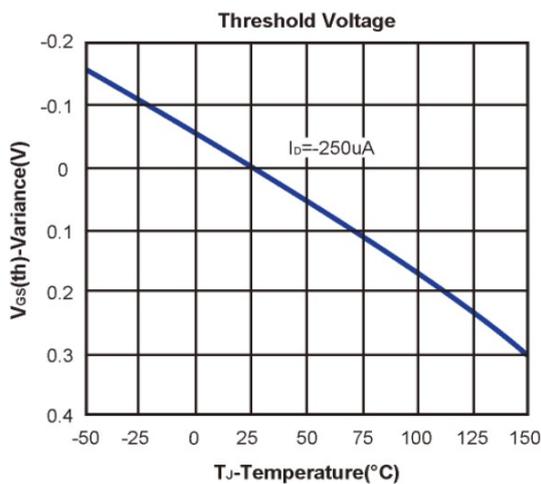
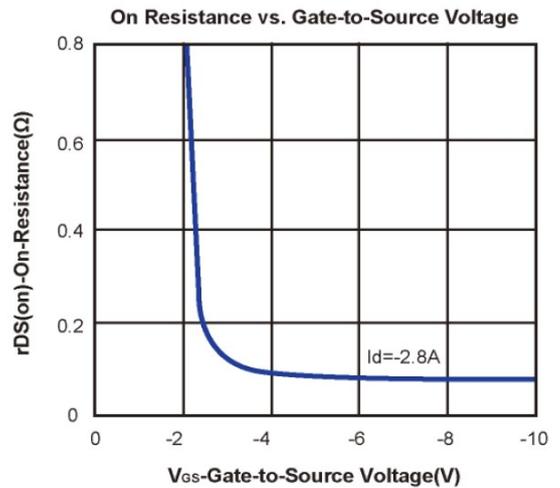
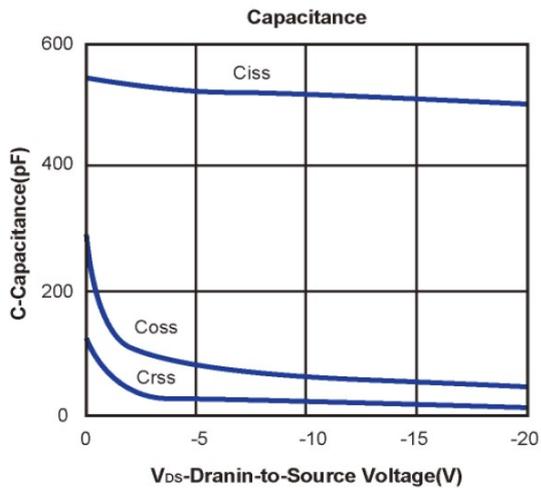
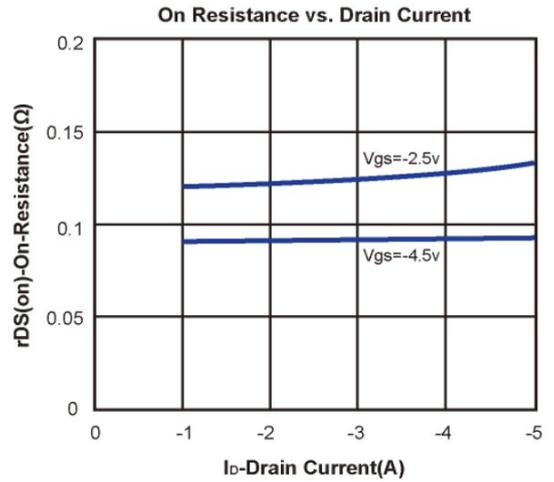
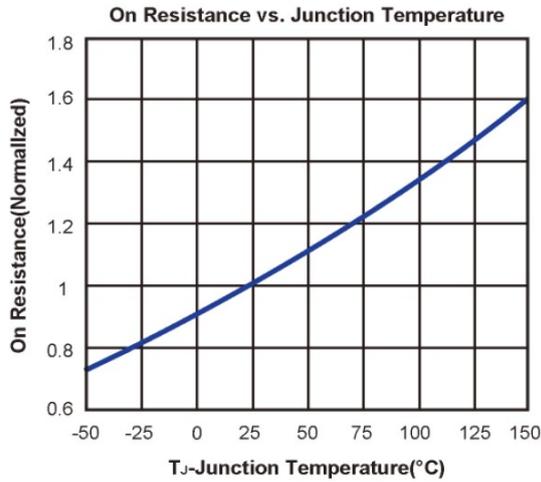
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = -250μA	-20			V
Drain Cut-off Current	I _{DSS}	V _{DS} = -20 V, V _{GS} = 0V	--	--	-1	μA
Gate-Source Leakage Current	I _{GSS}	V _{GS} = ±8 V, V _{DS} = 0V	--	--	±10	μA
ON CHARACTERISTICS						
Gate Threshold Voltage	V _{GS(th)}	I _D = -250 μA, V _{DS} = V _{GS}	-0.4	--	-1	V
Drain-Source On-state Resistance	R _{DS(on)}	I _D = -2.8 A, V _{GS} = -4.5V	--	90	110	mΩ
		I _D = -2A, V _{GS} = -2.5V	--	110	150	mΩ
DYNAMIC CHARACTERISTICS						
Total Gate Charge	Q _g	V _{DS} = -6V, V _{GS} = -4.5V I _D = -2.8A		5.5		nC
Gate-Source Charge	Q _{gs}			1.3		
Gate-Drain Charge	Q _{gd}			1.2		
Input Capacitance	C _{iss}	V _{DS} = -15V, V _{GS} = 0V f = 1 MHz	--	475	--	pF
Output Capacitance	C _{oss}		--	52	--	
Feedback Capacitance	C _{riss}		--	17	--	
SWITCHING CHARACTERISTICS						
Turn-on Delay Time	t _{d(on)}	V _{DD} = -6V, R _L = 6Ω, I _D = -1.0A, V _{GEN} = -4.5V, R _G = 6Ω	--	1357		ns
Turn-on Rise Time	t _r			825		
Turn-off Delay Time	t _{d(off)}		--	5510		
Turn-off Fall Time	t _f			1450		
DRAIN-SOURCE DIODE CHARACTERISTICS AND MAXIMUM RATINGS						
Drain-Source Diode Forward Current	I _S	--	--	--	-0.75	A
Drain-Source Diode Forward Voltage	V _{SD}	I _S = -1.6A, V _{GS} = 0V	-0.5	--	-1.2	V

Notes:

1. Pulse width limited by maximum junction temperature. Pulse test: PW≤300μs, duty cycles≤2%.
2. For design AID only, not subject to production testing. Switching time is essentially independent of operating temperature.

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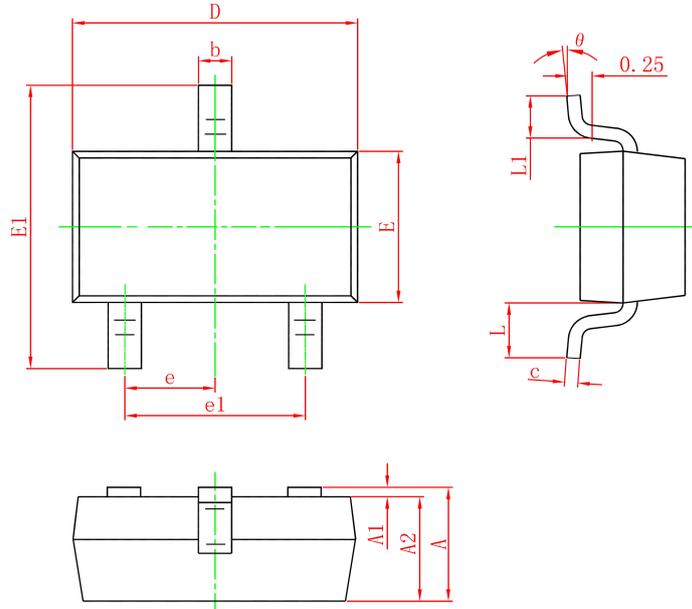
- Typical Performance Characteristics



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- Package Information

SOT-23 PACKAGE OUTLINE DIMENSIONS



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	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	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP.		0.037TYP.	
e1	1.800	2.000	0.071	0.079
L	0.550 REF.		0.022REF.	
L1	0.300	0.500	0.012	0.020
theta	0°	8°	0°	8°
UNIT:mm				