

Product Summary

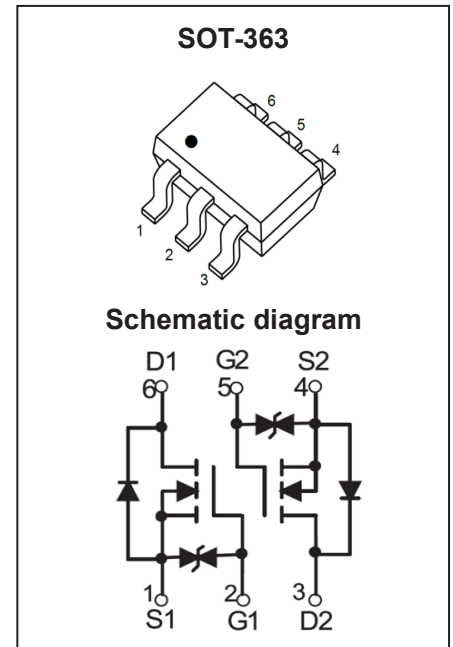
$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
60V	1.0Ω@10V	0.3A
	1.2Ω@4.5V	
-60V	1.9Ω@-10V	-0.19A
	2.5Ω@-4.5V	

Feature

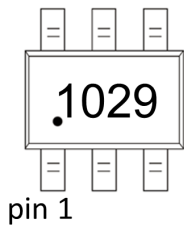
- Trench Technology Power MOSFET
- Low $R_{DS(ON)}$
- Low Gate Charge
- ESD Protected

Application

- Load Switch
- DC/DC Converter



MARKING:



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

Parameter	Symbol	Value	Value	Unit
Drain - Source Voltage	V_{DS}	60	-60	V
Gate - Source Voltage	V_{GS}	±20	±20	V
Continuous Drain Current ^{1,5}	I_D	0.3	-0.19	A
Pulsed Drain Current ²	I_{DM}	1.2	-0.76	A
Power Dissipation ^{4,5}	P_D	0.15	0.15	W
Thermal Resistance from Junction to Ambient ⁵	$R_{\theta JA}$	833	833	$^\circ\text{C}/\text{W}$
Junction Temperature	T_J	150	150	$^\circ\text{C}$
Storage Temperature	T_{STG}	-55~ +150	-55~ +150	$^\circ\text{C}$

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

Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Off Characteristics						
Drain - Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	60			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 48V, V_{GS} = 0V$			1	μA
Gate - Body Leakage Current	I_{GSS}	$V_{GS} = \pm 20V, V_{DS} = 0V$			± 3	μA
On Characteristics³						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	1.0	1.4	3.0	V
Drain-source On-resistance	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 0.3A$		1.0	3.0	Ω
		$V_{GS} = 4.5V, I_D = 0.1A$		1.2	4.0	
Dynamic Characteristics						
Input Capacitance	C_{iss}	$V_{DS} = 30V, V_{GS} = 0V, f = 1MHz$		24.6		pF
Output Capacitance	C_{oss}			3.7		
Reverse Transfer Capacitance	C_{rss}			1.1		
Gate Resistance	R_g	$V_{DS} = 0V, V_{GS} = 0V, f = 1MHz$		143.3		Ω
Switching Characteristics						
Total Gate Charge	Q_g	$V_{DS} = 30V, V_{GS} = 10V, I_D = 0.3A$		2.4		nC
Gate-source Charge	Q_{gs}			0.2		
Gate-drain Charge	Q_{gd}			0.5		
Turn-on Delay Time	$t_{d(on)}$	$V_{DD} = 30V, V_{GS} = 10V, I_D = 300mA, R_G = 3\Omega$		4		ns
Turn-on Rise Time	t_r			17		
Turn-off Delay Time	$t_{d(off)}$			10		
Turn-off Fall Time	t_f			48		
Source - Drain Diode Characteristics						
Diode Forward Voltage ³	V_{SD}	$V_{GS} = 0V, I_S = 0.3A$			1.2	V

OSFET ELECTRICAL CHARACTERISTICS (T_J = 25°C unless otherwise noted)
PMOS:

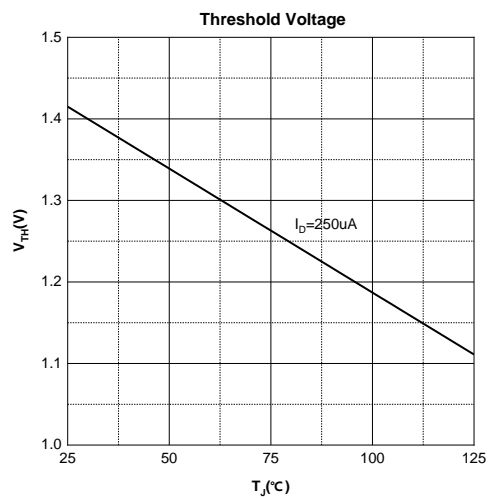
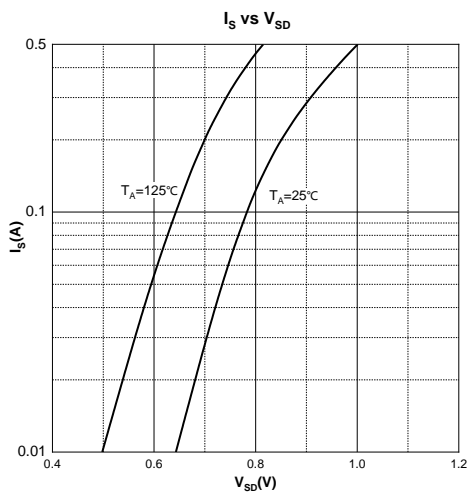
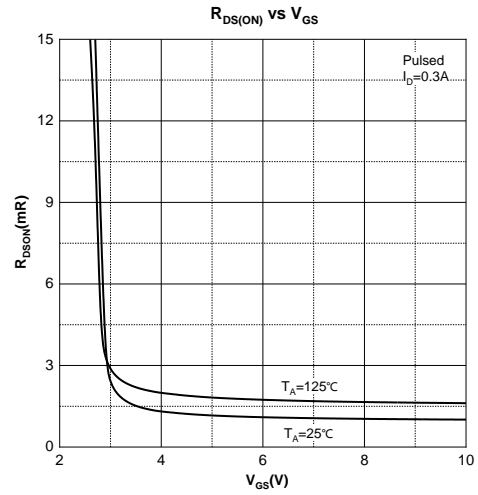
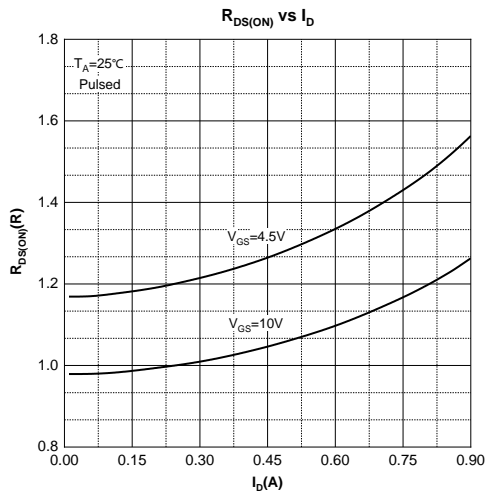
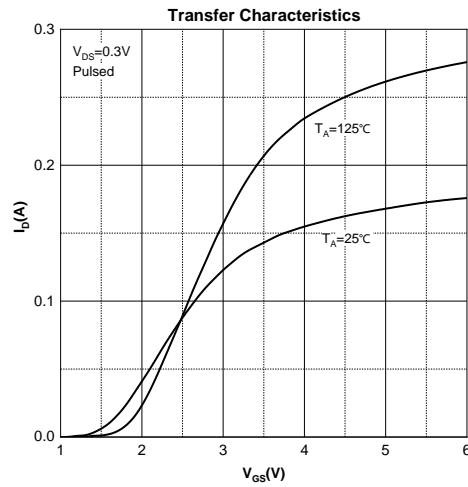
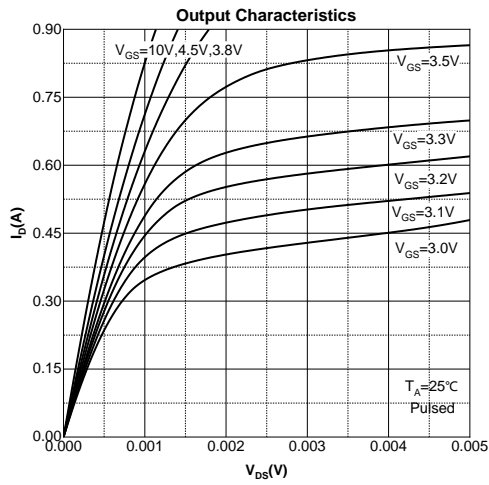
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Off Characteristics						
Drain - Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = -250μA	-60			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = -48V, V _{GS} = 0V			-1	μA
Gate - Body Leakage Current	I _{GSS}	V _{GS} = ±20V, V _{DS} = 0V			±3	μA
On Characteristics³						
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = -250μA	-1.0	-1.7	-3.0	V
Drain-source On-resistance	R _{DS(on)}	V _{GS} = -10V, I _D = -0.1A		1.9	4.0	Ω
		V _{GS} = -4.5V, I _D = -0.1A		2.5	5.0	
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} = -30V, V _{GS} = 0V, f = 1MHz		27.8		pF
Output Capacitance	C _{oss}			5.3		
Reverse Transfer Capacitance	C _{rss}			2.9		
Gate Resistance	R _g	V _{DS} = 0V, V _{GS} = 0V, f = 1MHz		153.8		Ω
Switching Characteristics						
Total Gate Charge	Q _g	V _{DS} = -30V, V _{GS} = -10V, I _D = -0.1A		2.7		nC
Gate-source Charge	Q _{gs}			0.2		
Gate-drain Charge	Q _{gd}			1.1		
Turn-on Delay Time	t _{d(on)}	V _{DD} = -30V, V _{GS} = -10V, I _D = -150mA, R _G = 3Ω		9		ns
Turn-on Rise Time	t _r			20		
Turn-off Delay Time	t _{d(off)}			15		
Turn-off Fall Time	t _f			73		
Source - Drain Diode Characteristics						
Diode Forward Voltage ³	V _{SD}	V _{GS} = 0V, I _S = -0.1A			-1.2	V

Notes :

- 1.The maximum current rating is limited by package.
- 2.Pulse Test : Pulse Width ≤ 10μs, duty cycle ≤ 1%.
- 3.Pulse Test : Pulse Width ≤ 300μs, duty cycle ≤ 2%.
- 4.The power dissipation P_D is limited by T_{J(MAX)} = 150°C.
- 5.Device mounted on 1in² FR-4 board with 2oz. Copper, in a still air environment with T_A =25°C.

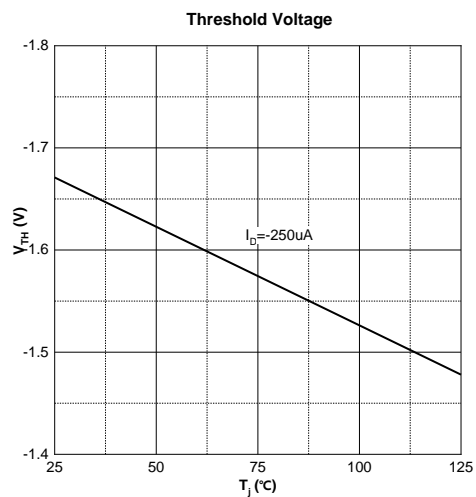
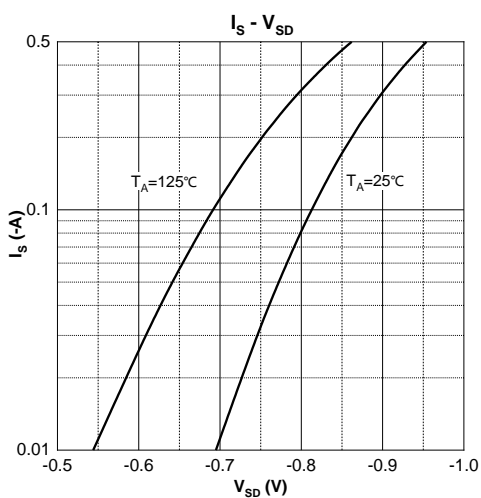
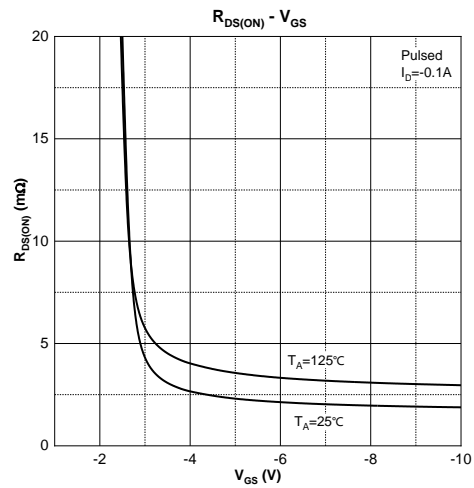
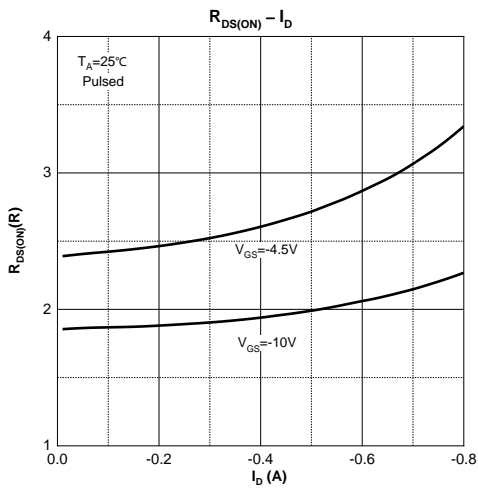
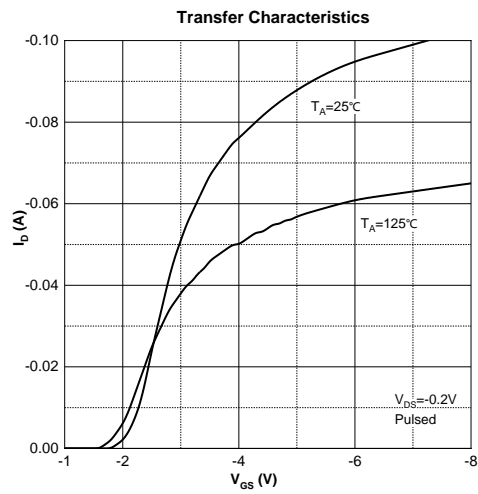
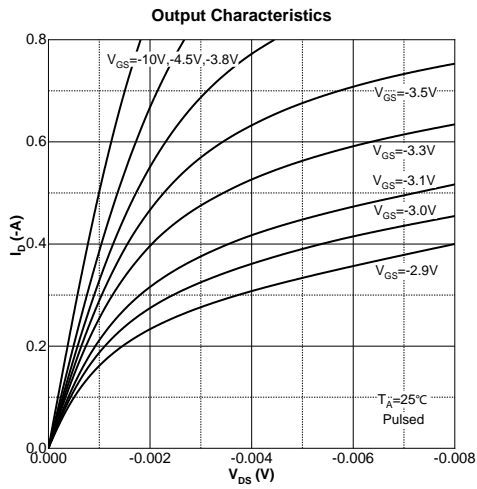
Typical Characteristics

NMOS:

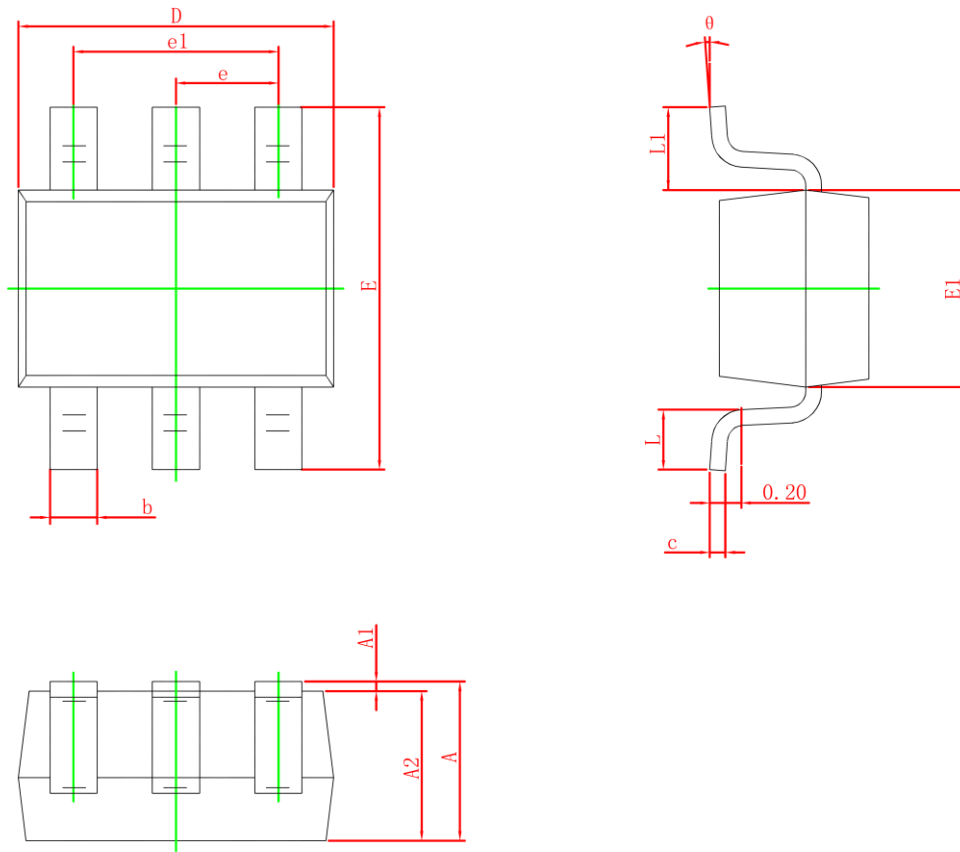


Typical Characteristics

PMOS:



SOT-363 Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.000	0.035	0.039
A1	0	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
b	0.150	0.350	0.006	0.014
c	0.080	0.150	0.003	0.006
D	1.800	2.200	0.071	0.087
E	2.000	2.450	0.079	0.096
E1	1.150	1.350	0.045	0.053
e	0.650TYP		0.026TYP	
e1	1.200	1.400	0.047	0.055
L1	0.525REF		0.021REF	
L	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°