

P-Channel 60-V (D-S) MOSFET

Key Features:

- Low $r_{DS(on)}$ trench technology
- Low thermal impedance
- Fast switching speed

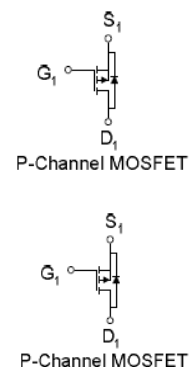
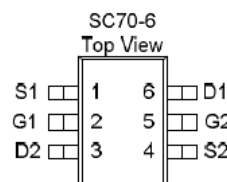
Typical Applications:

- White LED boost converters
- Automotive Systems
- Industrial DC/DC Conversion Circuits

PRODUCT SUMMARY		
V_{DS} (V)	$r_{DS(on)}$ (m Ω)	I_D (A)
-60	1250 @ $V_{GS} = -10V$	-0.400
	1700 @ $V_{GS} = -4.5V$	-0.343



RoHS
COMPLIANT
HALOGEN
FREE



P-Channel MOSFET

ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)

Parameter	Symbol	Limit	Units
Drain-Source Voltage	V_{DS}	-60	V
Gate-Source Voltage	V_{GS}	± 20	
Continuous Drain Current ^a	I_D	-0.400	A
		-0.335	
Pulsed Drain Current ^b	I_{DM}	-2	
Continuous Source Current (Diode Conduction) ^a	I_S	-0.4	A
Power Dissipation ^a	P_D	0.3	W
		0.21	
Operating Junction and Storage Temperature Range	T_J, T_{stg}	-55 to 150	$^\circ\text{C}$

THERMAL RESISTANCE RATINGS

Parameter	Symbol	Maximum	Units
Maximum Junction-to-Ambient ^a	$R_{\theta JA}$	415	$^\circ\text{C/W}$
		460	

Notes

- Surface Mounted on 1" x 1" FR4 Board.
- Pulse width limited by maximum junction temperature

Electrical Characteristics

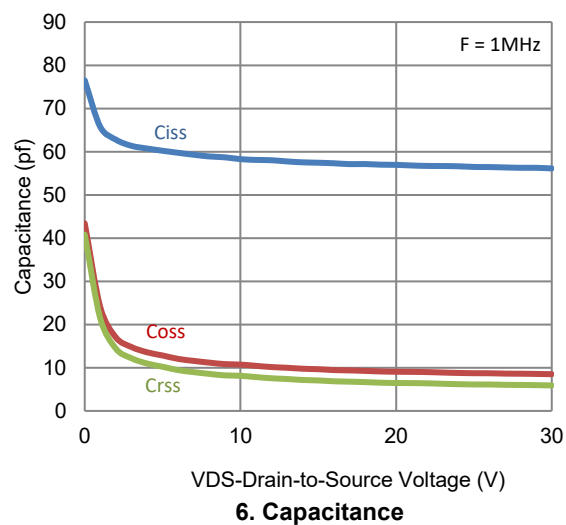
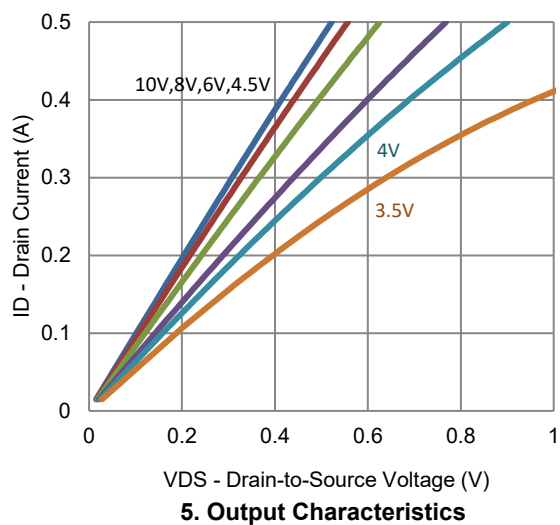
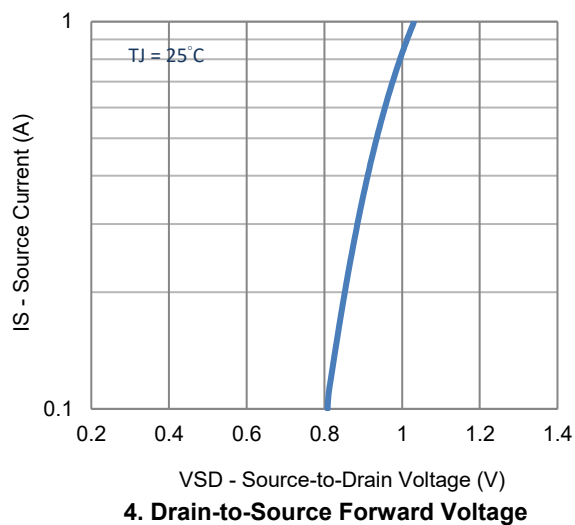
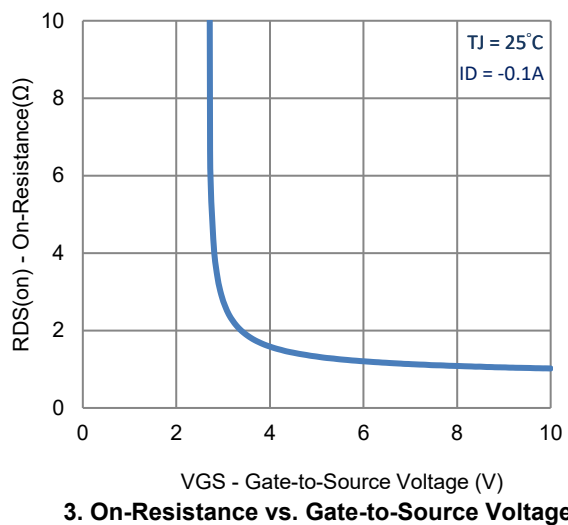
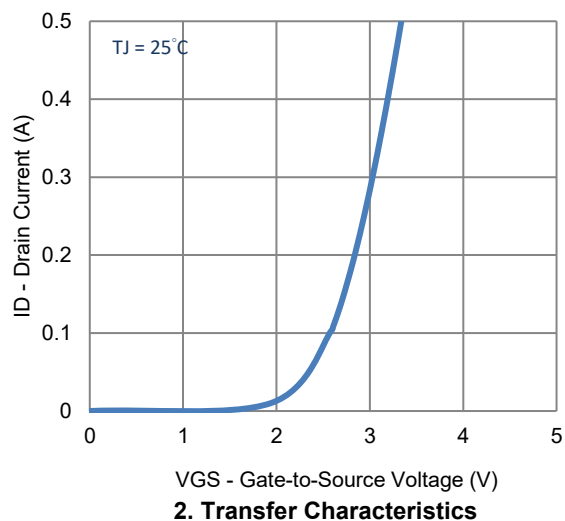
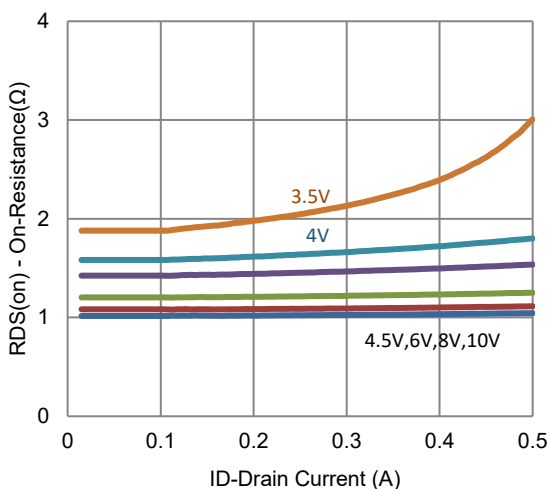
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Static						
Gate-Source Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250 \mu A$	-1			V
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0 V, V_{GS} = \pm 20 V$			± 10	μA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -48 V, V_{GS} = 0 V$			-1	μA
		$V_{DS} = -48 V, V_{GS} = 0 V, T_J = 55^\circ C$			-10	
On-State Drain Current ^a	$I_{D(on)}$	$V_{DS} = -5 V, V_{GS} = -10 V$	-0.6			A
Drain-Source On-Resistance ^a	$r_{DS(on)}$	$V_{GS} = -10 V, I_D = -0.4 A$			1250	m Ω
		$V_{GS} = -4.5 V, I_D = -0.3 A$			1700	
Forward Transconductance ^a	g_{fs}	$V_{DS} = -30 V, I_D = -0.4 A$		0.64		S
Diode Forward Voltage ^a	V_{SD}	$I_S = -0.2 A, V_{GS} = 0 V$		-0.81		V
Dynamic ^b						
Total Gate Charge	Q_g	$V_{DS} = -30 V, V_{GS} = -4.5 V,$ $I_D = -0.1 A$		1.197		nC
Gate-Source Charge	Q_{gs}			0.343		
Gate-Drain Charge	Q_{gd}			0.464		
Turn-On Delay Time	$t_{d(on)}$	$V_{DS} = -30 V, R_L = 300 \Omega,$ $I_D = -0.1 A,$ $V_{GEN} = -10 V, R_{GEN} = 6 \Omega$		6		ns
Rise Time	t_r			3		
Turn-Off Delay Time	$t_{d(off)}$			9		
Fall Time	t_f			6		
Input Capacitance	C_{iss}	$V_{DS} = -30 V, V_{GS} = 0 V, f = 1 \text{ Mhz}$		56		pF
Output Capacitance	C_{oss}			8		
Reverse Transfer Capacitance	C_{rss}			6		

Notes

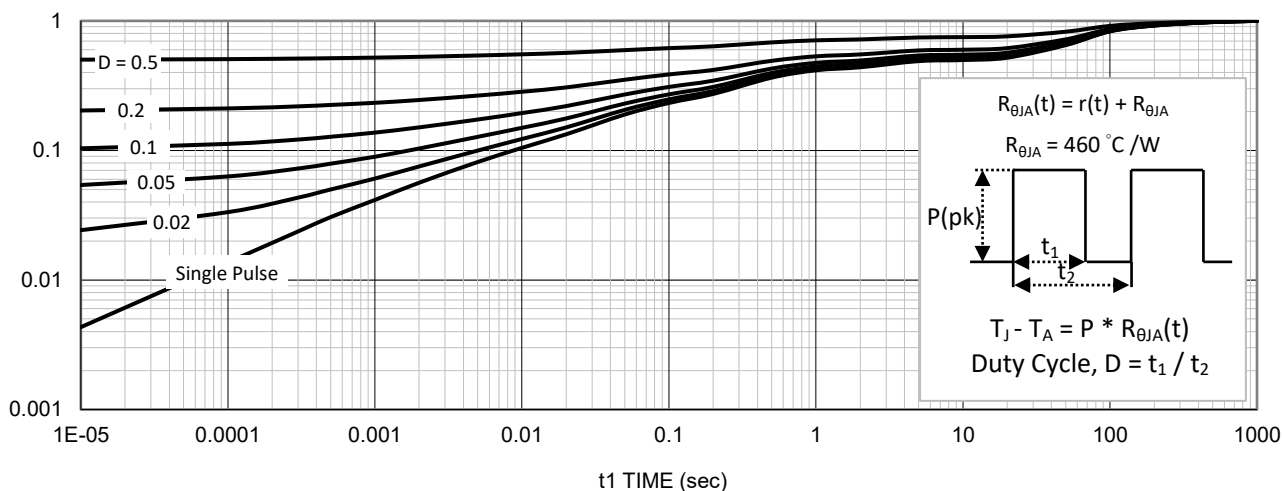
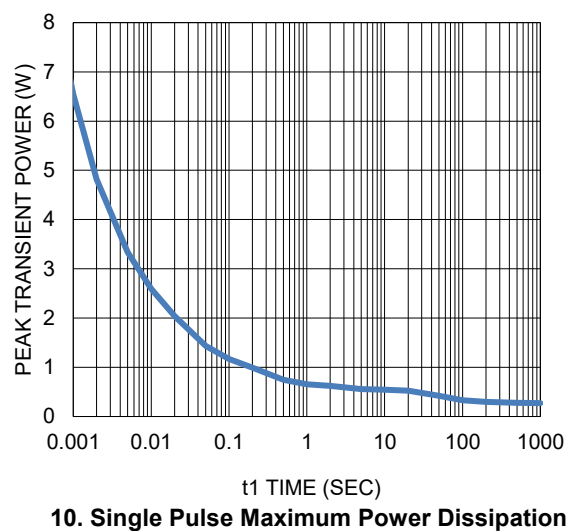
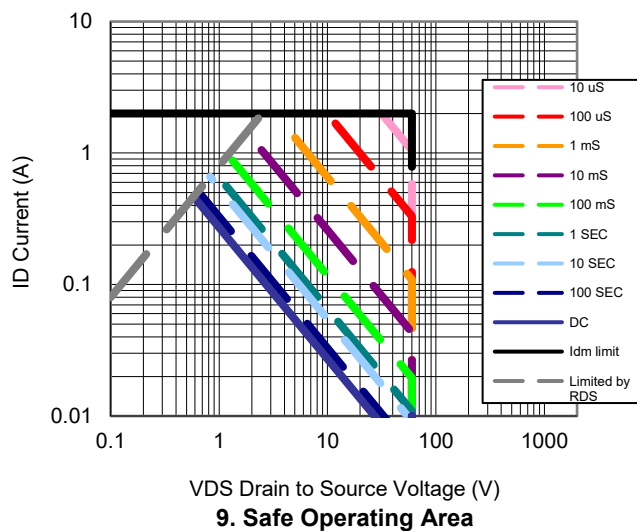
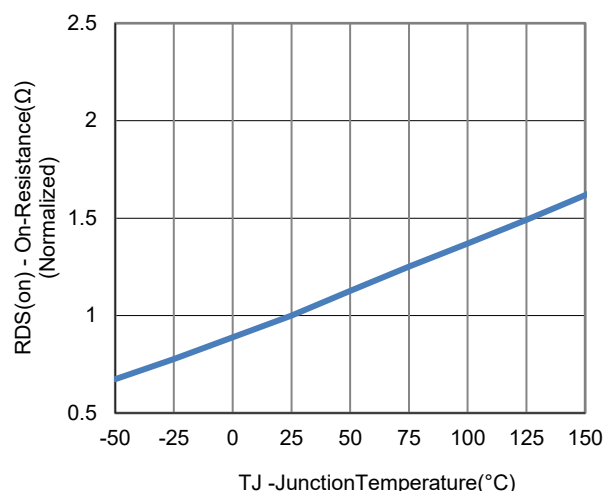
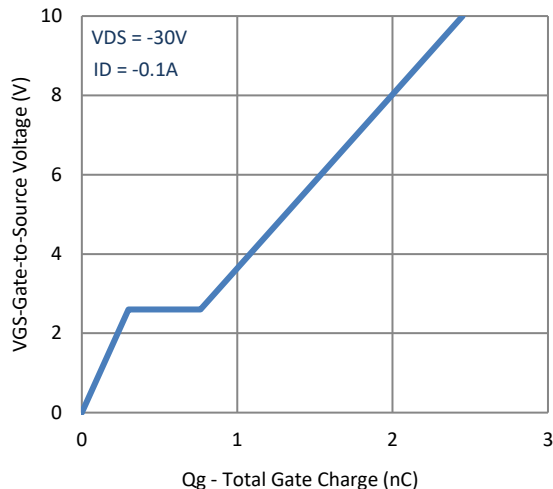
- a. Pulse test: PW ≤ 300us duty cycle ≤ 2%.
- b. Guaranteed by design, not subject to production testing.

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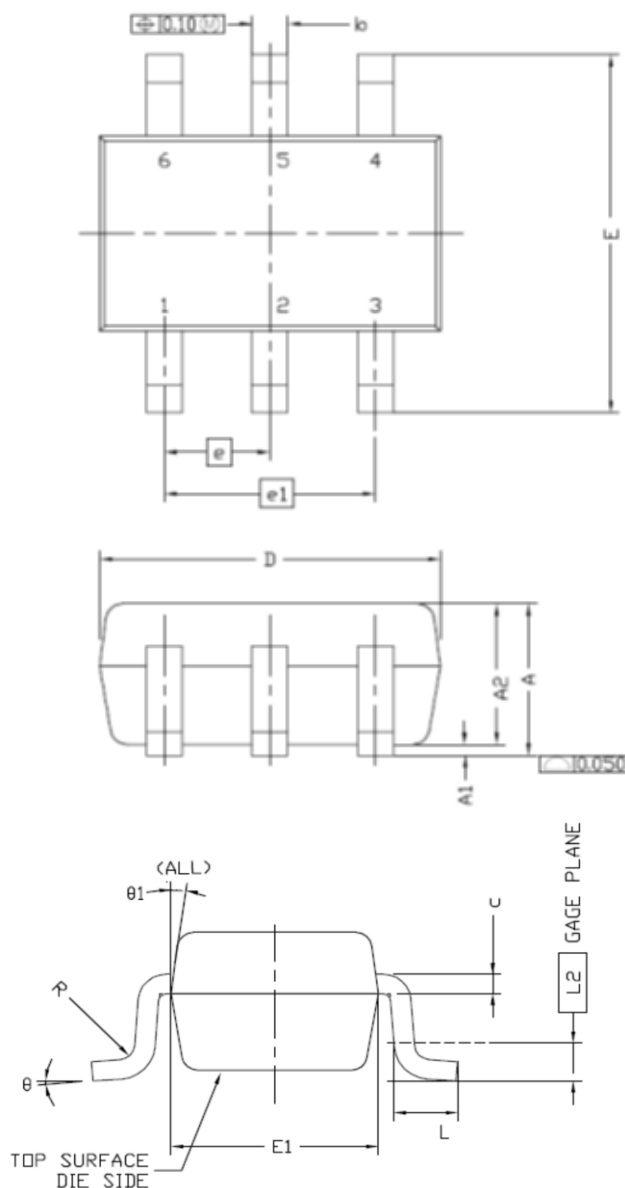
Typical Electrical Characteristics



Typical Electrical Characteristics



Package Information



DIM.	MILLIMETERS	
	MIN	MAX
A	0.8	1.1
A1	0	0.1
A2	0.7	1
b	0.15	0.3
c	0.08	0.2
D	2	2.2
E	2	2.2
E1	1.15	1.35
e	0.65 BSC	
e1	1.3 BSC	
L	0.26	0.46
L2	0.1	0.3
R	0.1	---
θ	0°	8°
$\theta1$	6°	11°

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