

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

Key Features:

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

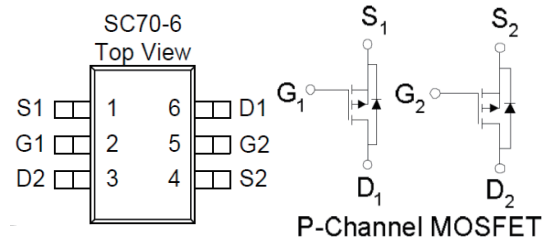
Typical Applications:

- 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	700 @ $V_{GS} = -10V$	-0.57
	860 @ $V_{GS} = -4.5V$	-0.52



RoHS
COMPLIANT
HALOGEN
FREE



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	-0.57	A
		-0.46	
Pulsed Drain Current ^b	I_{DM}	-2	
Continuous Source Current (Diode Conduction) ^a	I_S	-0.5	A
Power Dissipation ^a	P_D	0.34	W
		0.22	
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	$R_{\theta JA}$	375	$^\circ\text{C/W}$
		430	

Notes

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

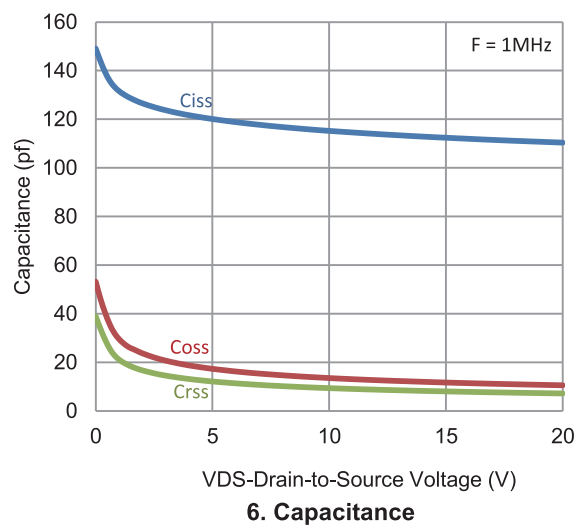
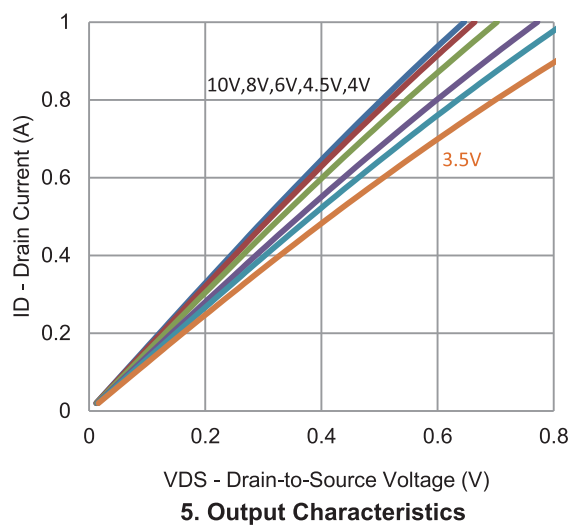
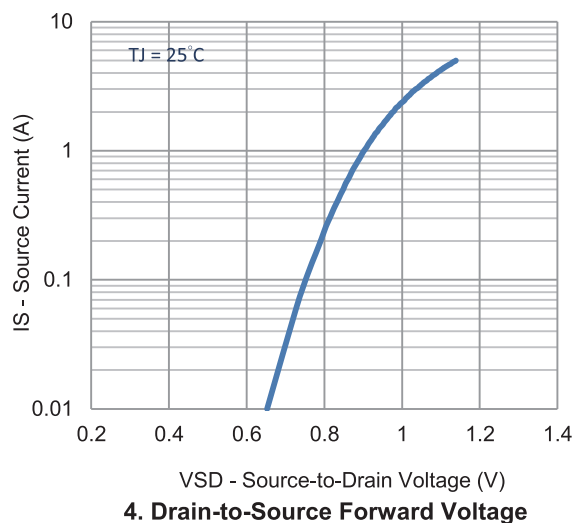
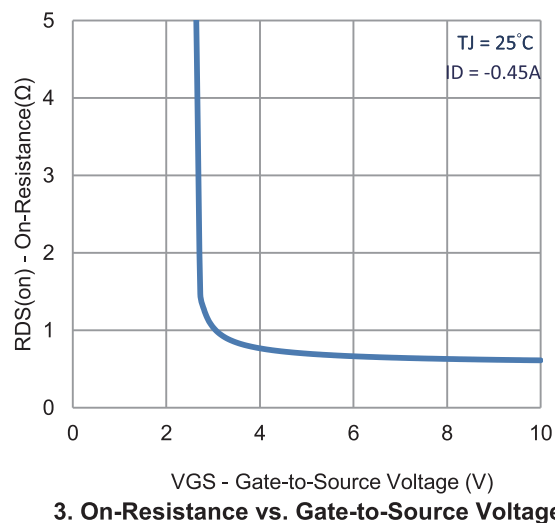
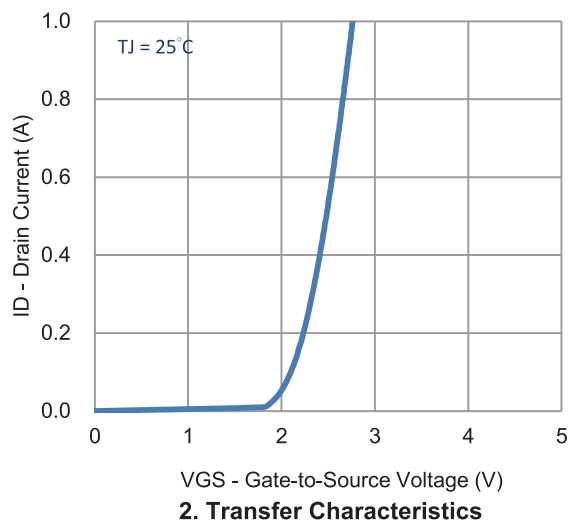
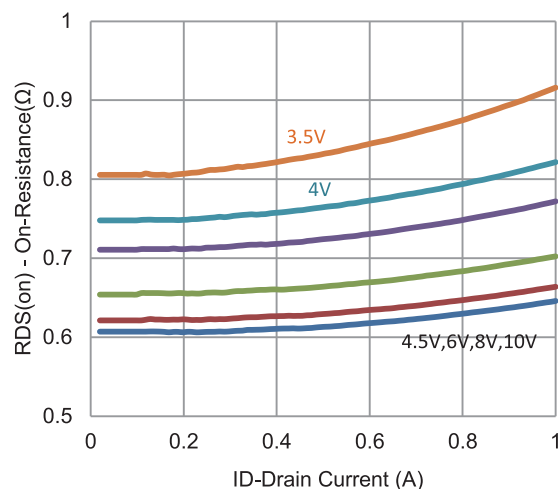
Electrical Characteristics

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
		$V_{DS} = -48 V, V_{GS} = 0 V, T_J = 55^\circ C$			-25	
On-State Drain Current ^a	$I_{D(on)}$	$V_{DS} = -5 V, V_{GS} = -10 V$	-1			A
Drain-Source On-Resistance ^a	$r_{DS(on)}$	$V_{GS} = -10 V, I_D = -0.45 A$			700	m Ω
		$V_{GS} = -4.5 V, I_D = -0.4 A$			860	
Forward Transconductance ^a	g_{fs}	$V_{DS} = -15 V, I_D = -0.45 A$		6		S
Diode Forward Voltage ^a	V_{SD}	$I_S = -0.3 A, V_{GS} = 0 V$		-0.81		V
Dynamic ^b						
Total Gate Charge	Q_g	$V_{DS} = -30 V, V_{GS} = -4.5 V,$ $I_D = -0.45 A$		1.1		nC
Gate-Source Charge	Q_{gs}			0.4		
Gate-Drain Charge	Q_{gd}			0.5		
Turn-On Delay Time	$t_{d(on)}$	$V_{DS} = -30 V, R_L = 66.7 \Omega,$ $I_D = -0.45 A,$ $V_{GEN} = -10 V, R_{GEN} = 6 \Omega$		3		ns
Rise Time	t_r			5		
Turn-Off Delay Time	$t_{d(off)}$			8		
Fall Time	t_f			3		
Input Capacitance	C_{iss}	$V_{DS} = -15 V, V_{GS} = 0 V, f = 1 Mhz$		112		pF
Output Capacitance	C_{oss}			11		
Reverse Transfer Capacitance	C_{rss}			8		

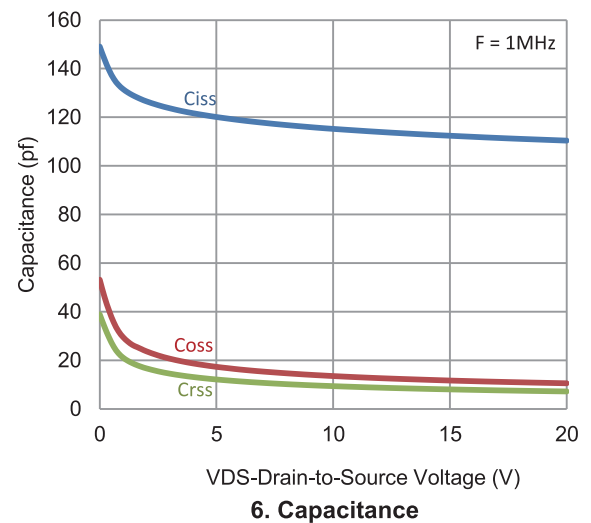
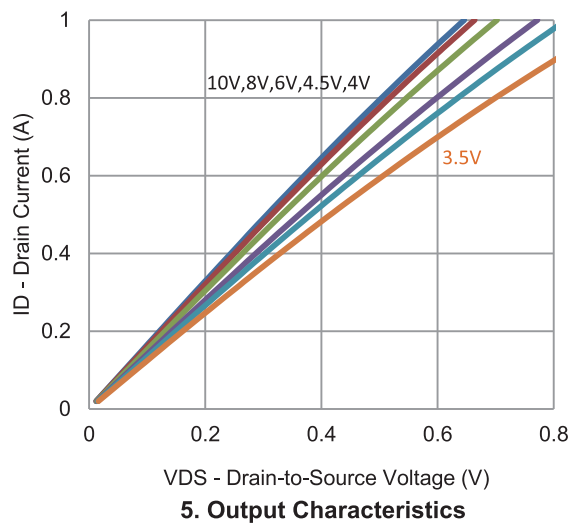
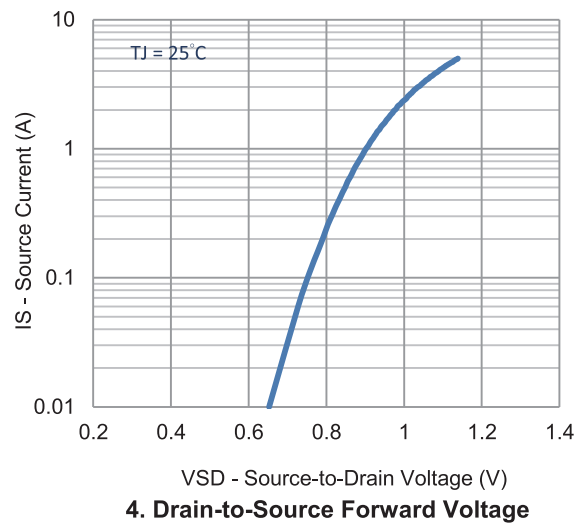
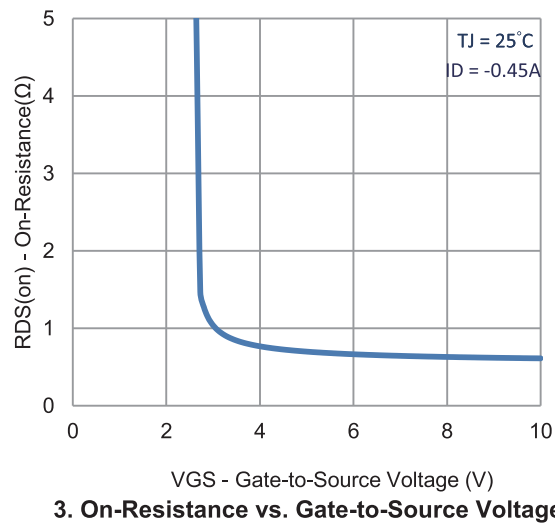
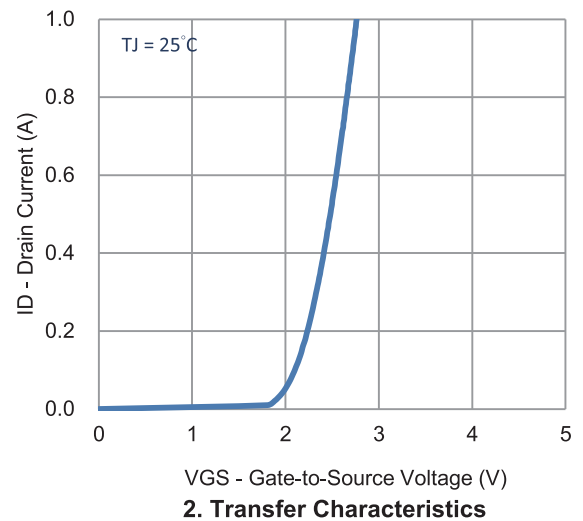
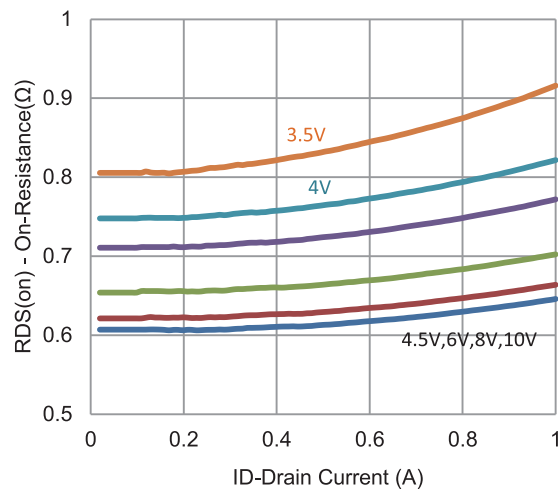
Notes

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

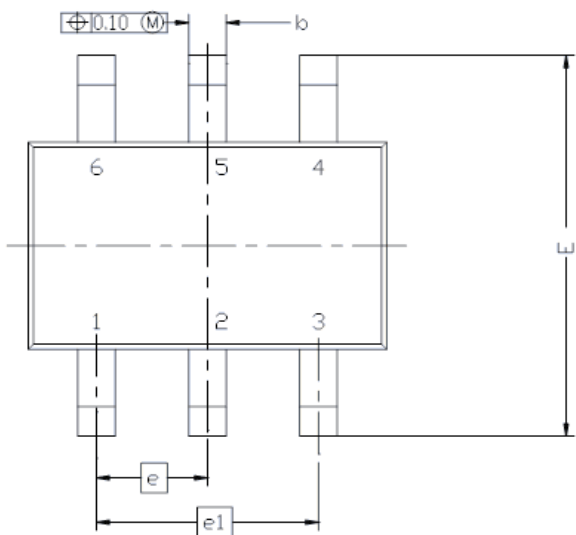
Typical Electrical Characteristics



Typical Electrical Characteristics



Package Information



DIM.	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.900	0.95	1.10	0.035	0.037	0.043
A1	0.00	----	0.10	0.000	----	0.004
A2	0.70	0.90	1.00	0.028	0.035	0.039
b	0.15	0.22	0.30	0.006	0.016	0.012
c	0.08	0.127	0.20	0.003	0.005	0.008
D	2.10 BSC			0.083 BSC		
E	2.30 BSC			0.091 BSC		
E1	1.30 BSC			0.051 BSC		
e	0.65 BSC			0.026 BSC		
e1	1.30 BSC			0.051 BSC		
L	0.26	0.40	0.46	0.010	0.015	0.018
L2	0.254BSC			0.010BSC		
R	0.10	----	----	0.004	----	----
Ø	0?	4?	8?	0?	4?	8?
Ø1	7?NOM			7?NOM		

