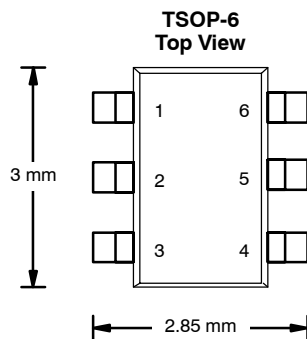




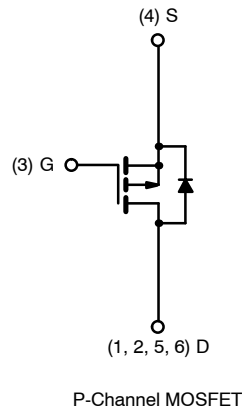
P-Channel 2.5-V (G-S) MOSFET

TrenchFET®
Power MOSFETs

PRODUCT SUMMARY		
V_{DS} (V)	$r_{DS(on)}$ (Ω)	I_D (A)
-20	0.090 @ $V_{GS} = -4.5$ V	-2.9
	0.130 @ $V_{GS} = -2.5$ V	-2.45



Ordering Information: Si3441BDV-T1
Si3441BDV-T1—E3 (Lead Free)
Marking Code: B1xxx



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)				
Parameter		Symbol	5 secs	Steady State
Drain-Source Voltage		V_{DS}	-20	
Gate-Source Voltage		V_{GS}	± 8	
Continuous Drain Current ($T_J = 150^\circ\text{C}$) ^a	$T_A = 25^\circ\text{C}$	I_D	-2.9	-2.45
	$T_A = 70^\circ\text{C}$		-2.35	-1.95
Pulsed Drain Current		I_{DM}	-16	
Continuous Diode Current (Diode Conduction) ^a		I_S	-1.0	-0.72
Maximum Power Dissipation ^a	$T_A = 25^\circ\text{C}$	P_D	1.25	0.86
	$T_A = 70^\circ\text{C}$		0.8	0.55
Operating Junction and Storage Temperature Range		T_J, T_{stg}	-55 to 150	

THERMAL RESISTANCE RATINGS					
Parameter		Symbol	Typical	Maximum	Unit
Maximum Junction-to-Ambient ^a	$t \leq 5$ sec	R_{thJA}	80	100	$^\circ\text{C/W}$
	Steady State		120	145	
Maximum Junction-to-Foot (Drain)	Steady State	R_{thJF}	70	85	

Notes

a. Surface Mounted on 1" x 1" FR4 Board.

For SPICE model information via the Worldwide Web: <http://www.vishay.com/www/product/spice.htm>.

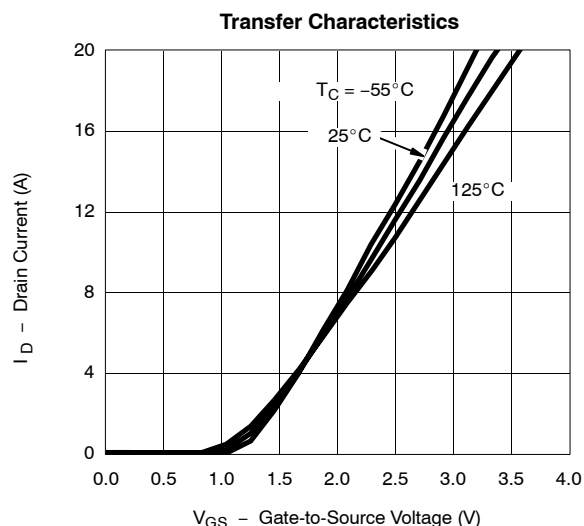
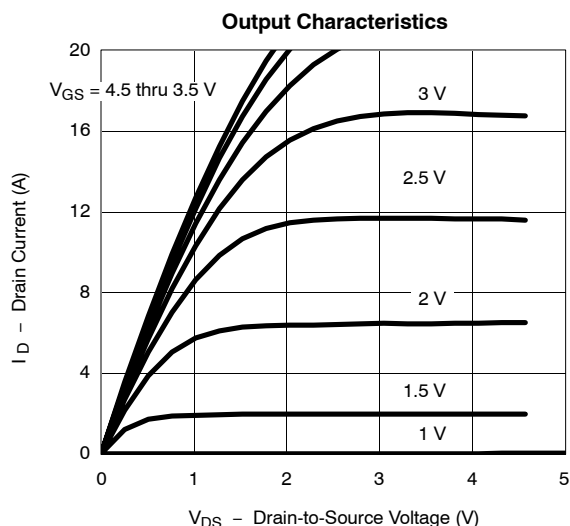
SPECIFICATIONS ($T_J = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\ \mu\text{A}$	-0.45		-0.85	V
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0\ \text{V}, V_{GS} = \pm 8\ \text{V}$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -20\ \text{V}, V_{GS} = 0\ \text{V}$			-1	μA
		$V_{DS} = -20\ \text{V}, V_{GS} = 0\ \text{V}, T_J = 70^\circ\text{C}$			-5	
On-State Drain Current ^a	$I_{D(on)}$	$V_{DS} = -5\ \text{V}, V_{GS} = -4.5\ \text{V}$	-10			A
		$V_{DS} = -5\ \text{V}, V_{GS} = -2.5\ \text{V}$	-4			
Drain-Source On-State Resistance ^a	$r_{DS(on)}$	$V_{GS} = -4.5\ \text{V}, I_D = -3.3\ \text{A}$		0.070	0.090	Ω
		$V_{GS} = -2.5\ \text{V}, I_D = -2.9\ \text{A}$		0.098	0.130	
Forward Transconductance ^a	g_{fs}	$V_{DS} = -10\ \text{V}, I_D = -3.3\ \text{A}$		8.0		S
Diode Forward Voltage ^a	V_{SD}	$I_S = -1.6\ \text{A}, V_{GS} = 0\ \text{V}$		-0.8	-1.2	V
Dynamic^b						
Total Gate Charge	Q_g	$V_{DS} = -10\ \text{V}, V_{GS} = -4.5\ \text{V}, I_D = -3.3\ \text{A}$		5.2	8.0	nC
Gate-Source Charge	Q_{gs}			0.8		
Gate-Drain Charge	Q_{gd}			1.5		
Turn-On Delay Time	$t_{d(on)}$	$V_{DD} = -10\ \text{V}, R_L = 10\ \Omega$ $I_D \cong -1.0\ \text{A}, V_{GEN} = -4.5\ \text{V}, R_g = 6\ \Omega$		15	25	ns
Rise Time	t_r			55	85	
Turn-Off Delay Time	$t_{d(off)}$			30	45	
Fall Time	t_f			40	60	
Source-Drain Reverse Recovery Time	t_{rr}	$I_F = -1.6\ \text{A}, di/dt = 100\ \text{A}/\mu\text{s}$		50	80	

Notes

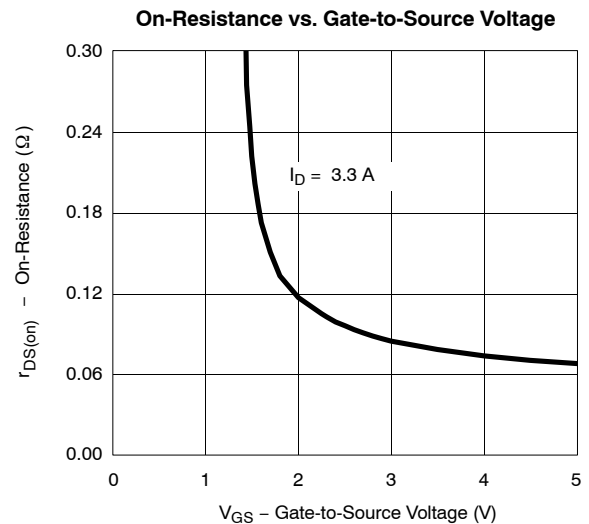
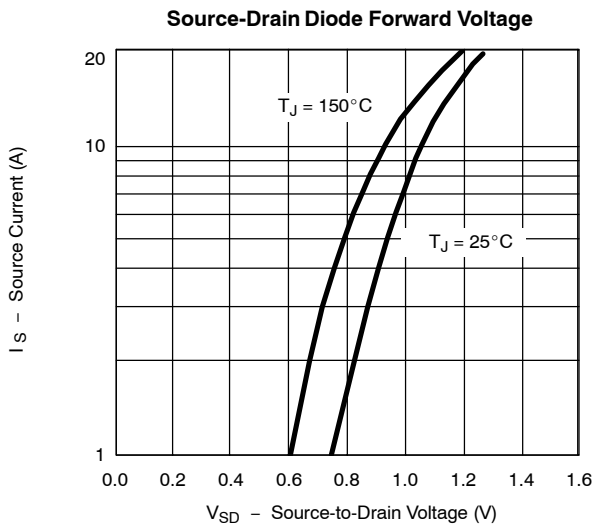
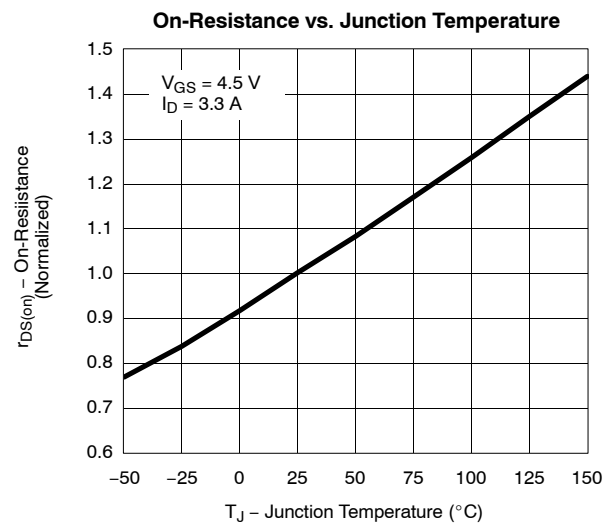
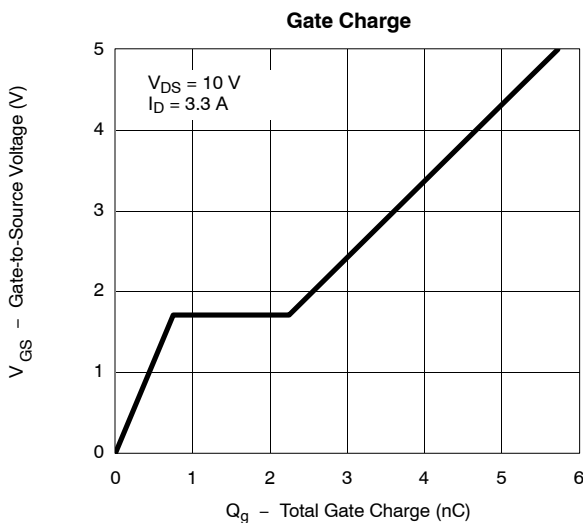
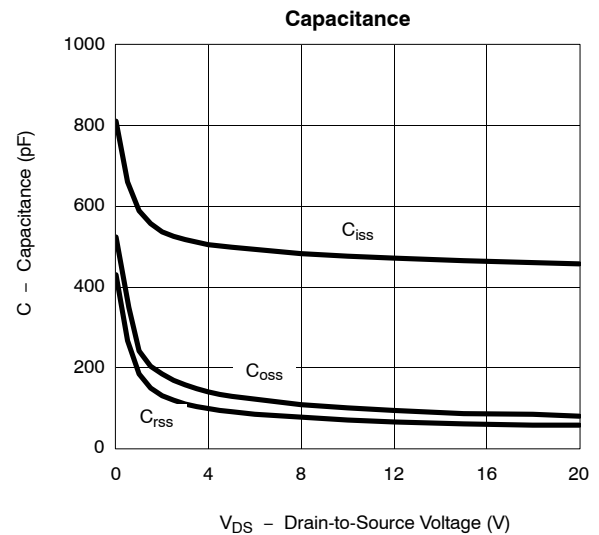
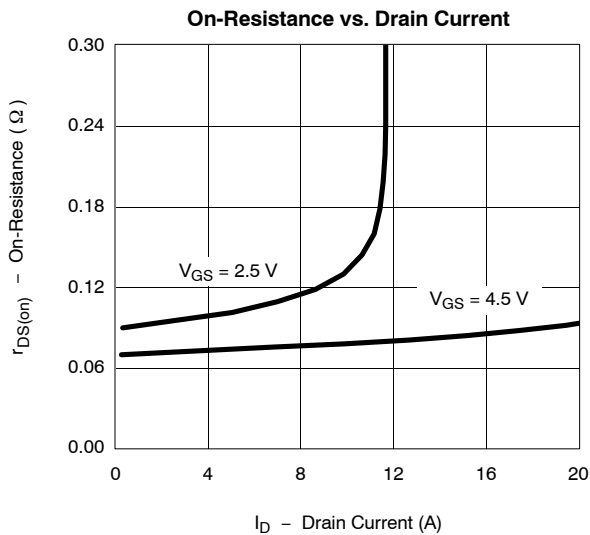
a. Pulse test; pulse width $\leq 300\ \mu\text{s}$, duty cycle $\leq 2\%$.

b. Guaranteed by design, not subject to production testing.

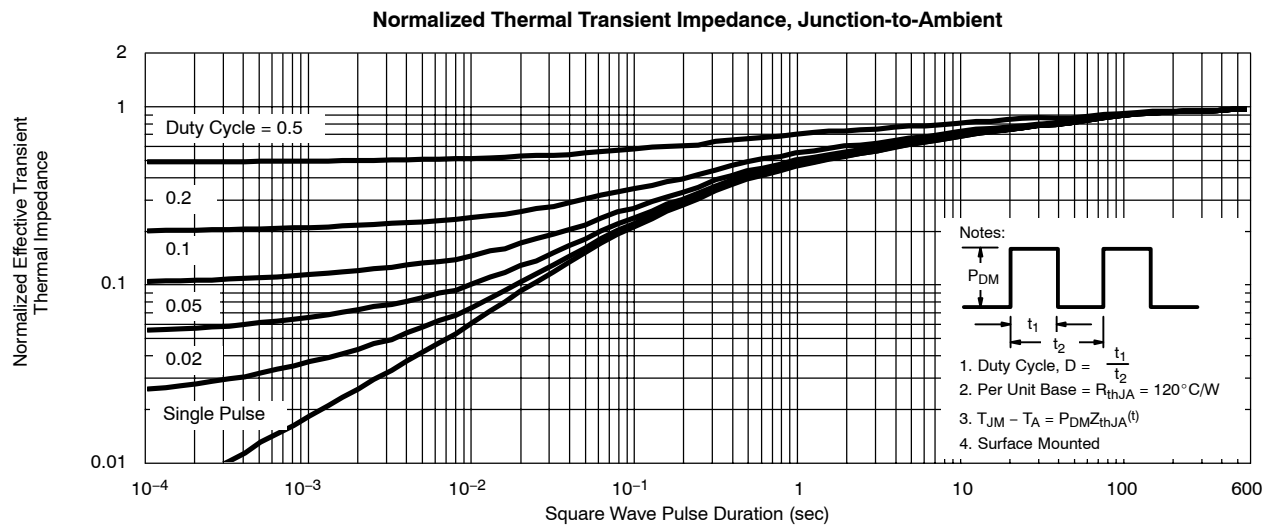
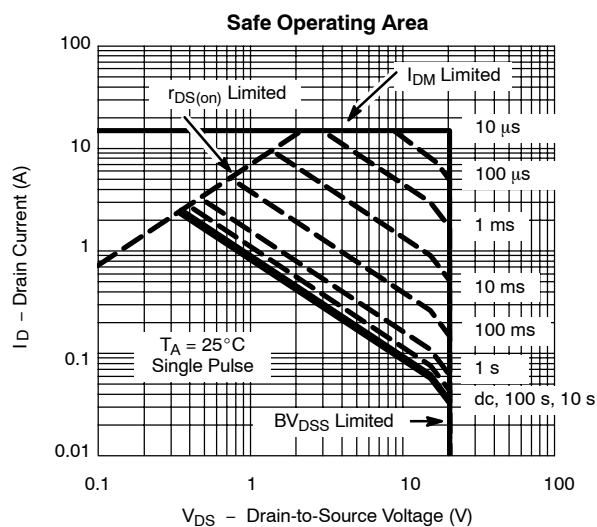
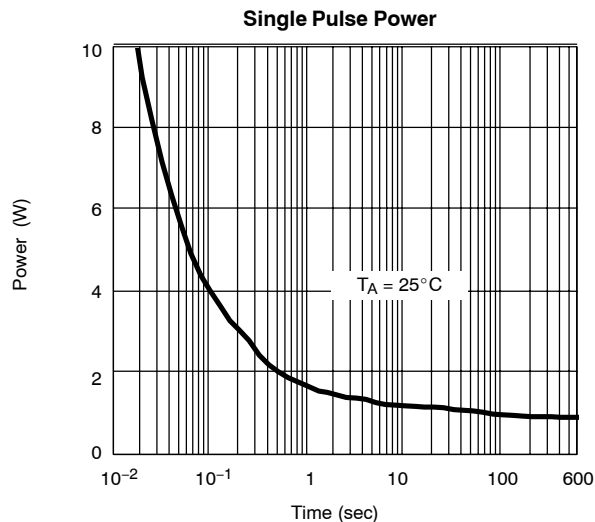
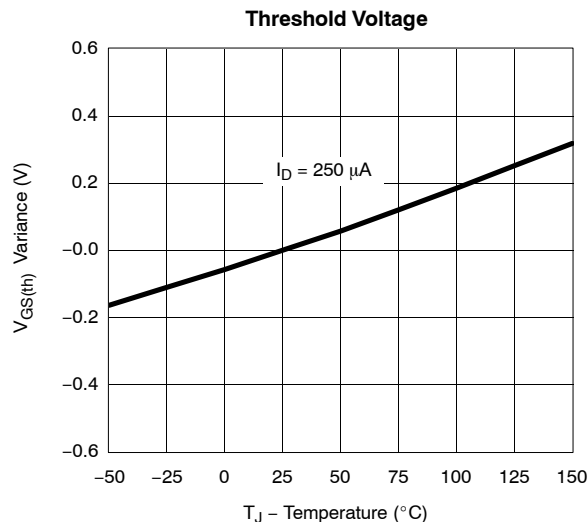
TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)



TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

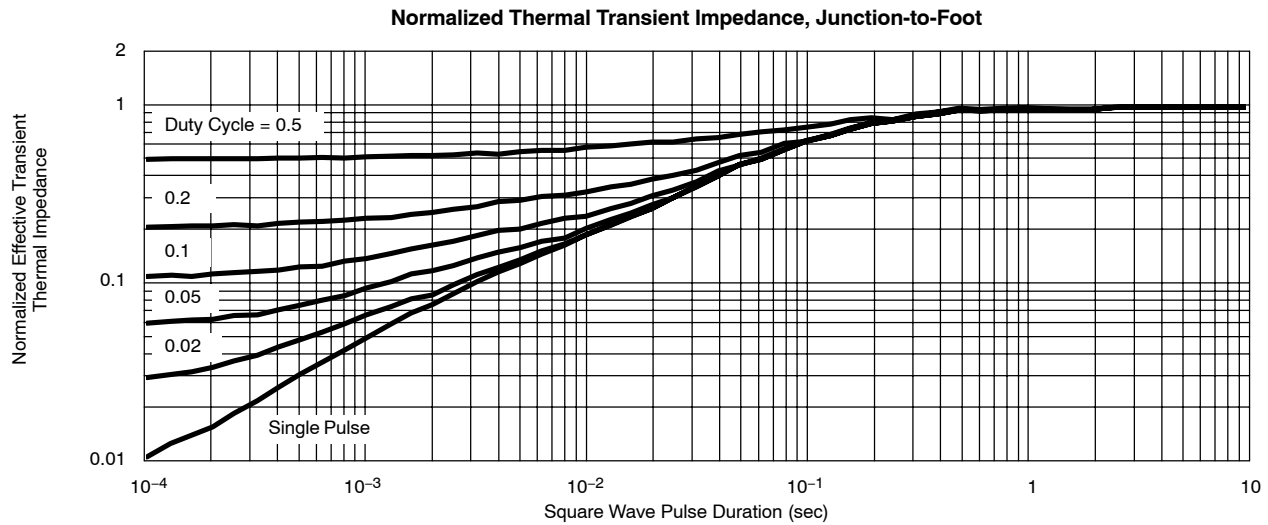


TYPICAL CHARACTERISTICS (25 °C UNLESS NOTED)





TYPICAL CHARACTERISTICS (25 °C UNLESS NOTED)





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