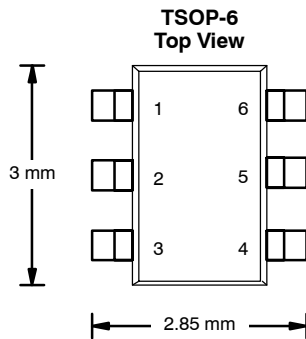


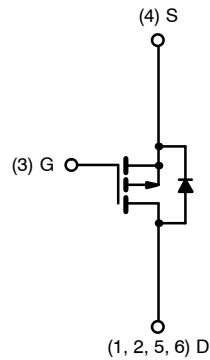
## P-Channel 2.5-V (G-S) MOSFET

**TrenchFET®**  
Power MOSFETs

PRODUCT SUMMARY		
$V_{DS}$ (V)	$r_{DS(on)}$ ( $\Omega$ )	$I_D$ (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



P-Channel MOSFET

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

THERMAL RESISTANCE RATINGS					
Parameter		Symbol	Typical	Maximum	Unit
Maximum Junction-to-Ambient <sup>a</sup>	$t \leq 5$ 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>.

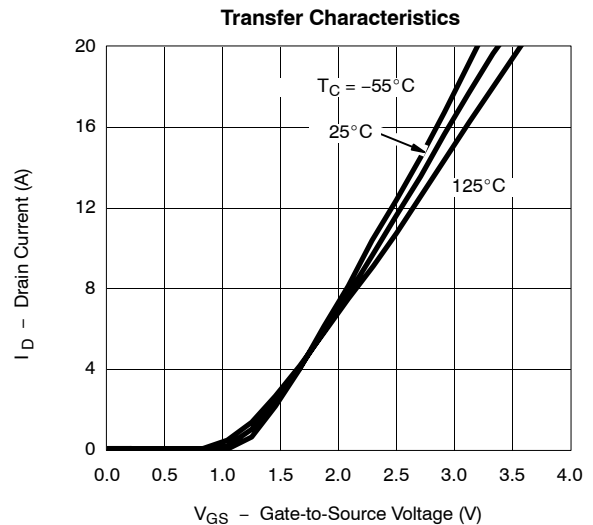
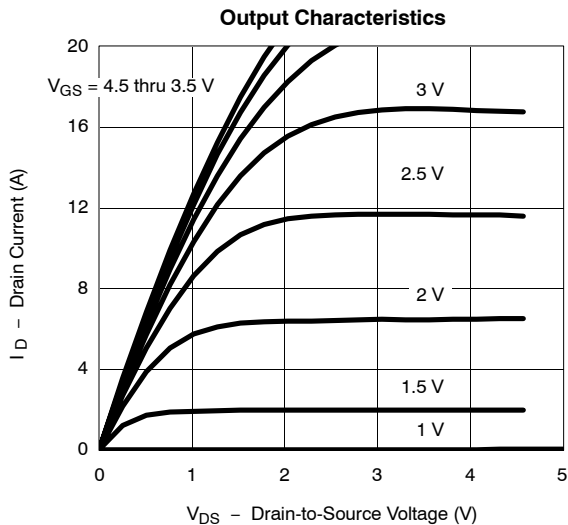


<b>SPECIFICATIONS (T<sub>J</sub> = 25 °C UNLESS OTHERWISE NOTED)</b>						
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
<b>Static</b>						
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = -250 μA	-0.45		-0.85	V
Gate-Body Leakage	I <sub>GSS</sub>	V <sub>DS</sub> = 0 V, V <sub>GS</sub> = ±8 V			±100	nA
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> = -20 V, V <sub>GS</sub> = 0 V			-1	μA
		V <sub>DS</sub> = -20 V, V <sub>GS</sub> = 0 V, T <sub>J</sub> = 70 °C			-5	
On-State Drain Current <sup>a</sup>	I <sub>D(on)</sub>	V <sub>DS</sub> = -5 V, V <sub>GS</sub> = -4.5 V	-10			A
		V <sub>DS</sub> = -5 V, V <sub>GS</sub> = -2.5 V	-4			
Drain-Source On-State Resistance <sup>a</sup>	r <sub>DS(on)</sub>	V <sub>GS</sub> = -4.5 V, I <sub>D</sub> = -3.3 A		0.070	0.090	Ω
		V <sub>GS</sub> = -2.5 V, I <sub>D</sub> = -2.9 A		0.098	0.130	
Forward Transconductance <sup>a</sup>	g <sub>fs</sub>	V <sub>DS</sub> = -10 V, I <sub>D</sub> = -3.3 A		8.0		S
Diode Forward Voltage <sup>a</sup>	V <sub>SD</sub>	I <sub>S</sub> = -1.6 A, V <sub>GS</sub> = 0 V		-0.8	-1.2	V
<b>Dynamic<sup>b</sup></b>						
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> = -10 V, V <sub>GS</sub> = -4.5 V, I <sub>D</sub> = -3.3 A		5.2	8.0	nC
Gate-Source Charge	Q <sub>gs</sub>			0.8		
Gate-Drain Charge	Q <sub>gd</sub>			1.5		
Turn-On Delay Time	t <sub>d(on)</sub>	V <sub>DD</sub> = -10 V, R <sub>L</sub> = 10 Ω I <sub>D</sub> ≅ -1.0 A, V <sub>GEN</sub> = -4.5 V, R <sub>g</sub> = 6 Ω		15	25	ns
Rise Time	t <sub>r</sub>			55	85	
Turn-Off Delay Time	t <sub>d(off)</sub>			30	45	
Fall Time	t <sub>f</sub>			40	60	
Source-Drain Reverse Recovery Time	t <sub>rr</sub>		I <sub>F</sub> = -1.6 A, di/dt = 100 A/μs		50	

**Notes**

- a. Pulse test; pulse width ≤ 300 μs, duty cycle ≤ 2%.
- b. Guaranteed by design, not subject to production testing.

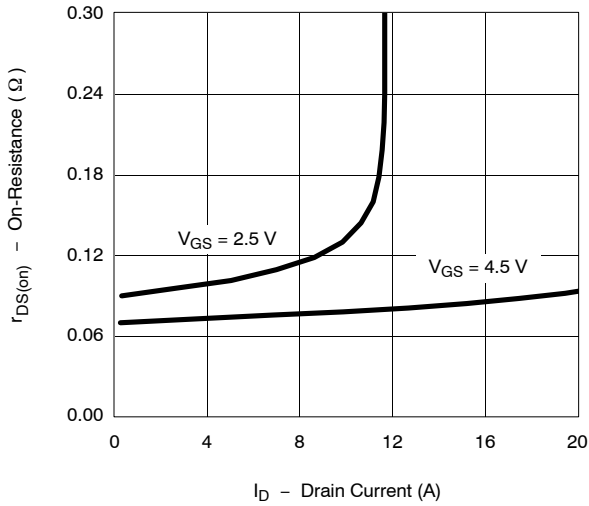
**TYPICAL CHARACTERISTICS (25 °C UNLESS NOTED)**



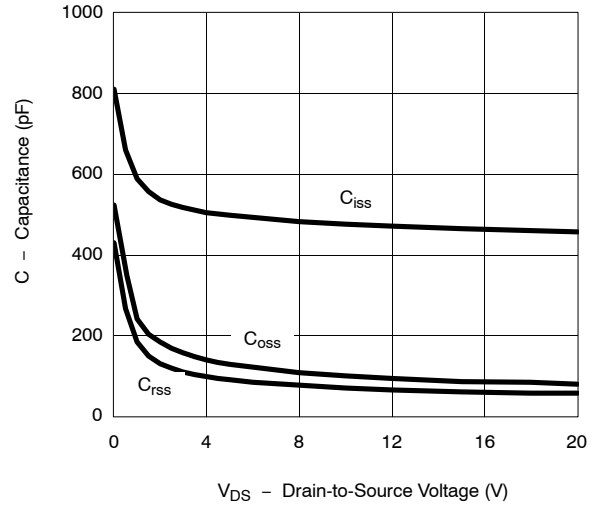


**TYPICAL CHARACTERISTICS (25 °C UNLESS NOTED)**

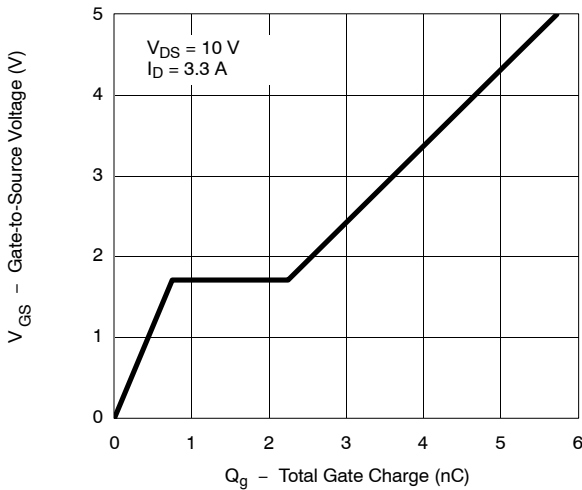
**On-Resistance vs. Drain Current**



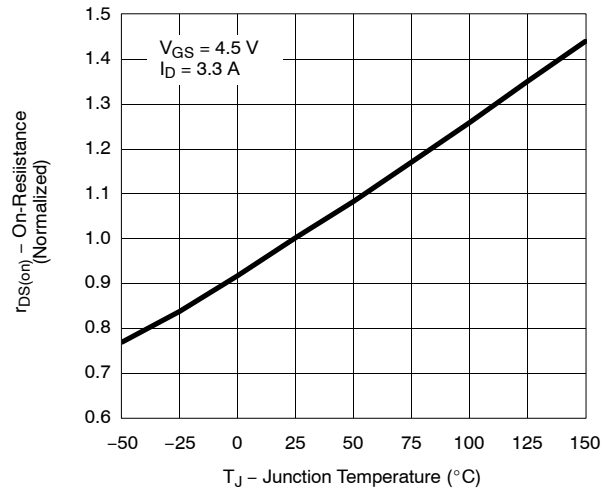
**Capacitance**



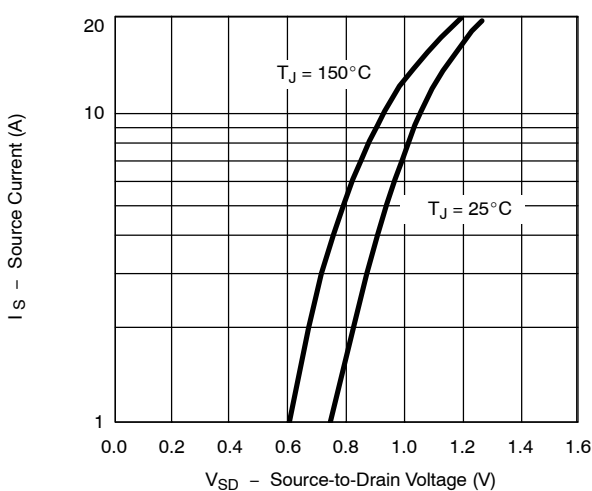
**Gate Charge**



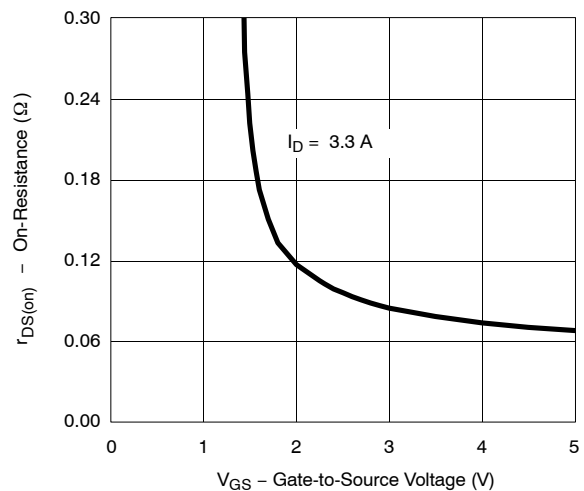
**On-Resistance vs. Junction Temperature**



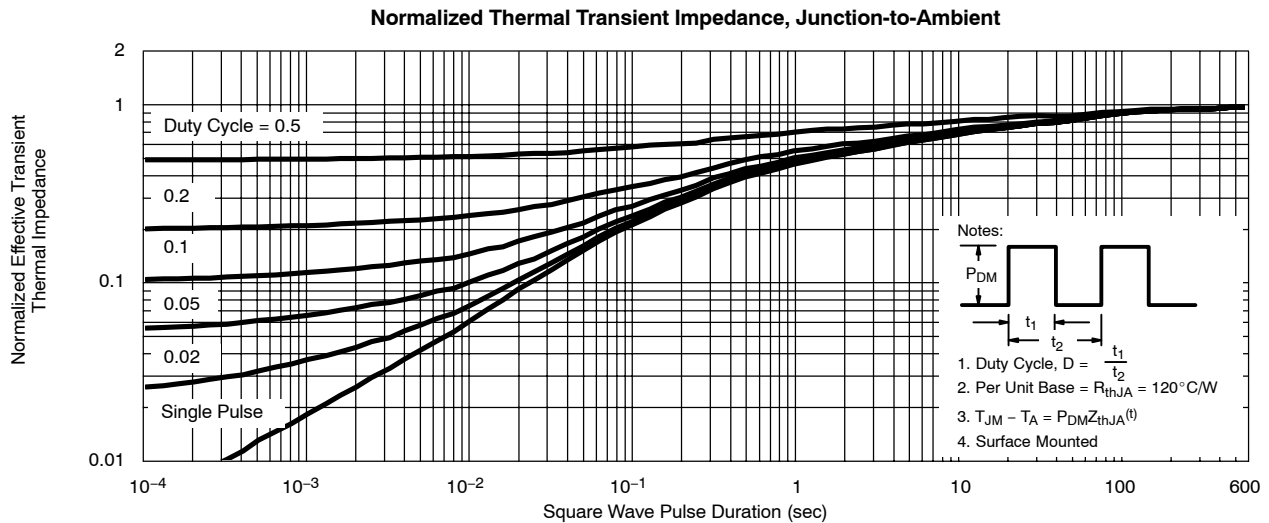
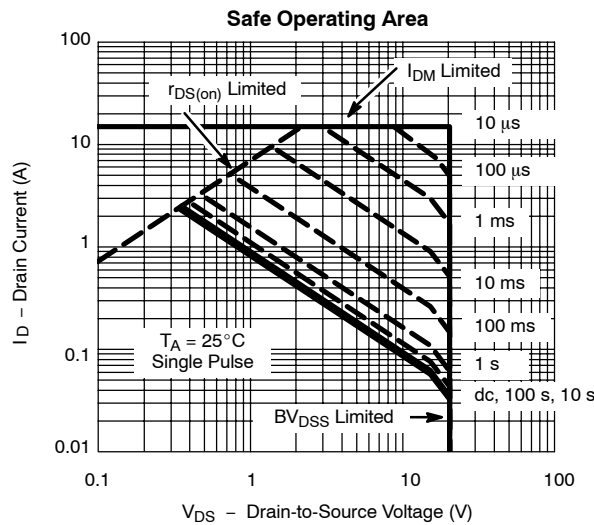
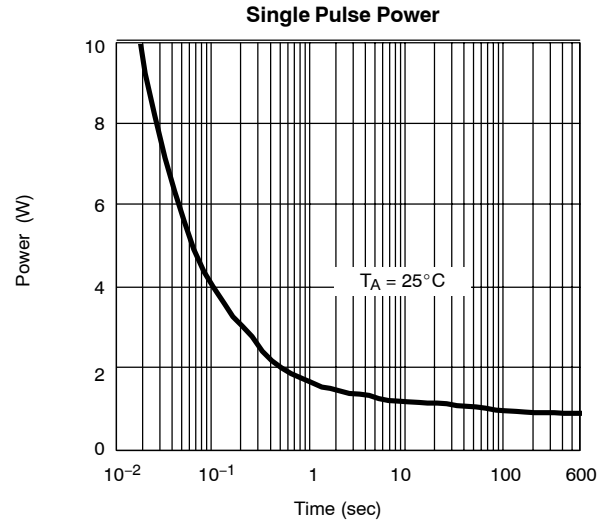
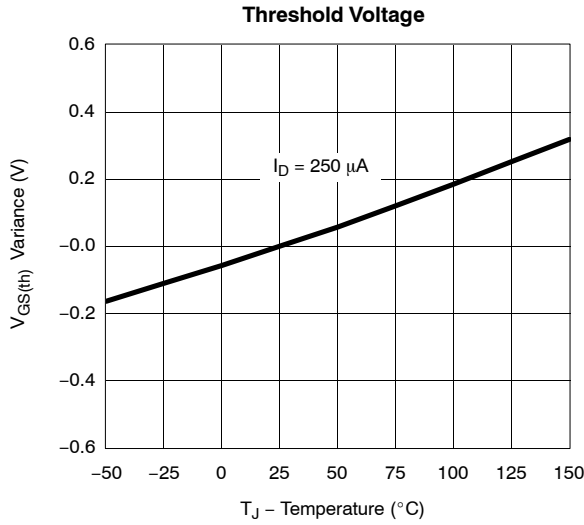
**Source-Drain Diode Forward Voltage**



**On-Resistance vs. Gate-to-Source Voltage**

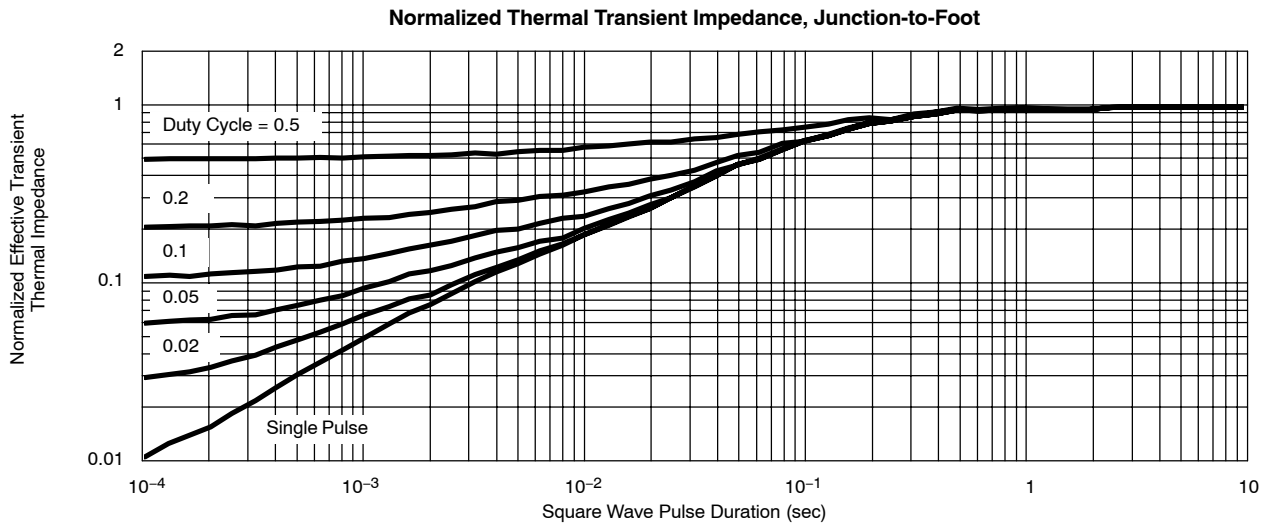


**TYPICAL CHARACTERISTICS (25 °C UNLESS NOTED)**





**TYPICAL CHARACTERISTICS (25 °C UNLESS NOTED)**





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