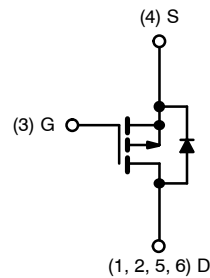
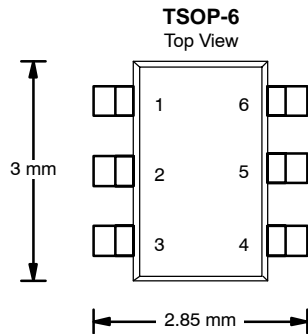




## P-Channel 1.8-V (G-S) MOSFET

**TrenchFET®**  
Power MOSFETs  
1.8-V Rated

PRODUCT SUMMARY		
$V_{DS}$ (V)	$r_{DS(on)}$ ( $\Omega$ )	$I_D$ (A)
-8	0.042 @ $V_{GS} = -4.5$ V	$\pm 5.6$
	0.060 @ $V_{GS} = -2.5$ V	$\pm 4.7$
	0.080 @ $V_{GS} = -1.8$ V	$\pm 2.9$



P-Channel MOSFET

Ordering Information: Si3445DV-T1  
Si3445DV-T1—E3 (Lead (Pb)-Free)

ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)				
Parameter		Symbol	Limit	Unit
Drain-Source Voltage		$V_{DS}$	-8	V
Gate-Source Voltage		$V_{GS}$	$\pm 8$	
Continuous Drain Current ( $T_J = 150^\circ\text{C}$ ) <sup>a, b</sup>	$T_A = 25^\circ\text{C}$	$I_D$	$\pm 5.6$	A
	$T_A = 70^\circ\text{C}$		$\pm 4.5$	
Pulsed Drain Current		$I_{DM}$	$\pm 20$	
Continuous Source Current (Diode Conduction) <sup>a, b</sup>		$I_S$	-1.7	
Maximum Power Dissipation <sup>a, b</sup>	$T_A = 25^\circ\text{C}$	$P_D$	2.0	W
	$T_A = 70^\circ\text{C}$		1.3	
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	$R_{thJA}$		62.5	$^\circ\text{C/W}$
	Steady State		106		

Notes

- a. Surface Mounted on FR4 Board.
- b.  $t \leq 5$  sec.

**SPECIFICATIONS (T<sub>J</sub> = 25° C UNLESS OTHERWISE NOTED)**

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		-1.0	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> = -8 V, V <sub>GS</sub> = 0 V			-1	μA
		V <sub>DS</sub> = -8 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	-15			A
Drain-Source On-State Resistance <sup>a</sup>	r <sub>DS(on)</sub>	V <sub>GS</sub> = -4.5 V, I <sub>D</sub> = -5.6 A		0.034	0.042	Ω
		V <sub>GS</sub> = -2.5 V, I <sub>D</sub> = -4.7 A		0.048	0.060	
		V <sub>GS</sub> = -1.8 V, I <sub>D</sub> = -2.0 A		0.062	0.080	
Forward Transconductance <sup>a</sup>	g <sub>fs</sub>	V <sub>DS</sub> = -10 V, I <sub>D</sub> = -5.6 A		15		S
Diode Forward Voltage <sup>a</sup>	V <sub>SD</sub>	I <sub>S</sub> = -1.7 A, V <sub>GS</sub> = 0 V		0.7	-1.2	V
<b>Dynamic<sup>b</sup></b>						
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> = -4 V, V <sub>GS</sub> = -4.5 V, I <sub>D</sub> = -5.6 A		15	25	nC
Gate-Source Charge	Q <sub>gs</sub>			3		
Gate-Drain Charge	Q <sub>gd</sub>			2		
Turn-On Delay Time	t <sub>d(on)</sub>	V <sub>DD</sub> = -4 V, R <sub>L</sub> = 4 Ω I <sub>D</sub> ≅ -1 A, V <sub>GEN</sub> = -4.5 V, R <sub>g</sub> = 6 Ω		20	40	ns
Rise Time	t <sub>r</sub>			50	100	
Turn-Off Delay Time	t <sub>d(off)</sub>			110	220	
Fall Time	t <sub>f</sub>			60	120	
Source-Drain Reverse Recovery Time	t <sub>rr</sub>		I <sub>F</sub> = -1.7 A, di/dt = 100 A/μs		60	

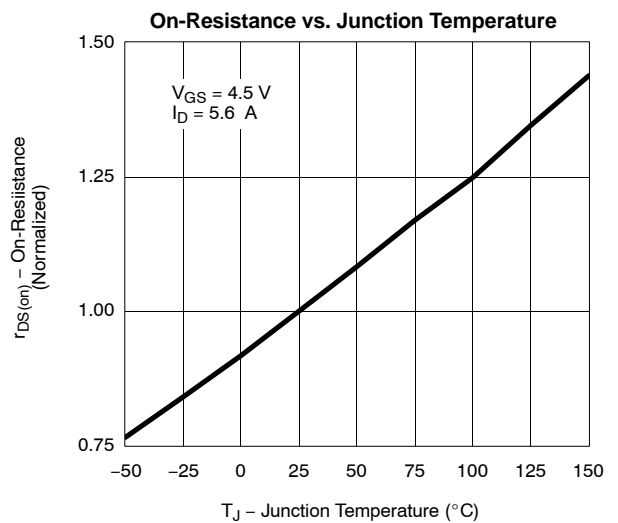
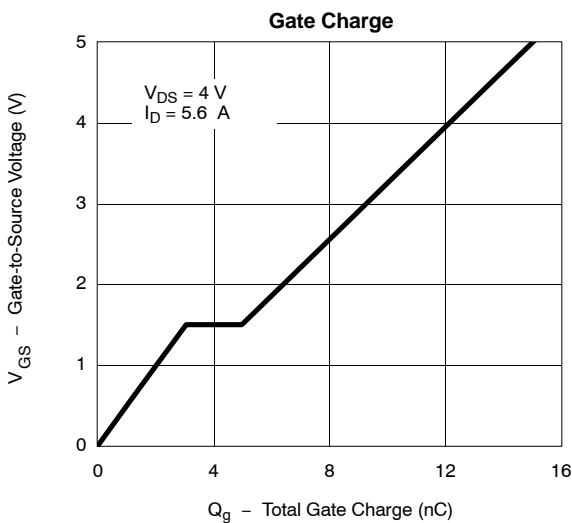
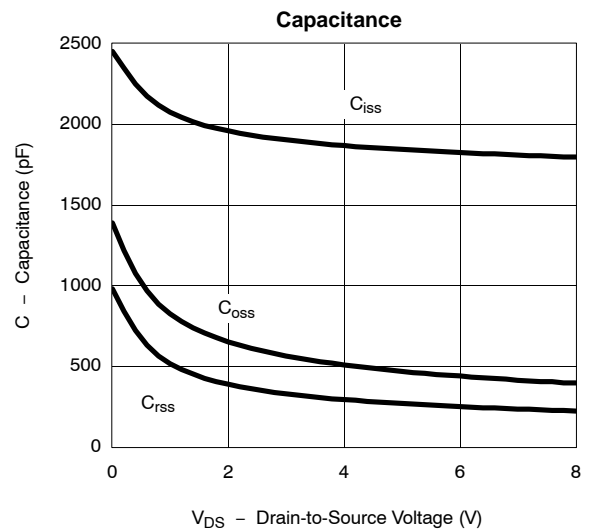
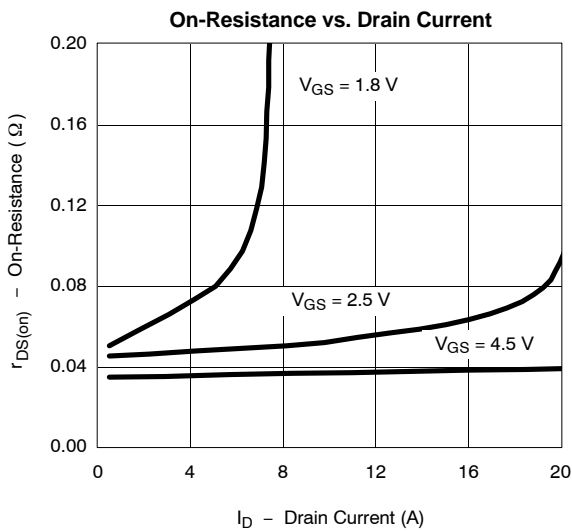
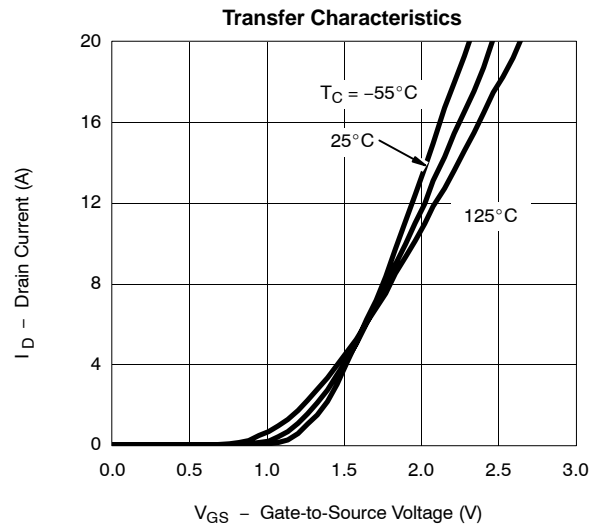
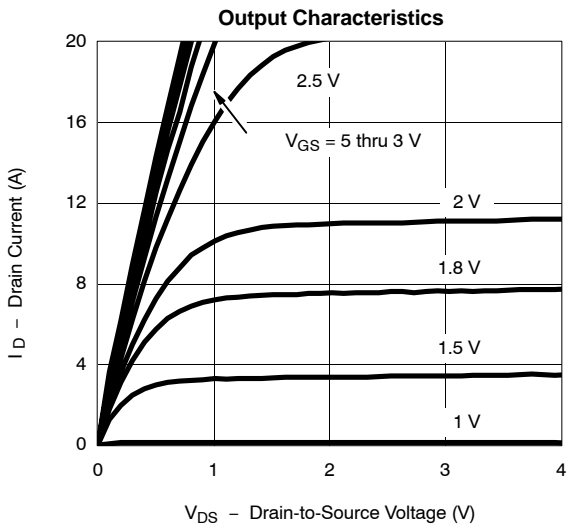
## Notes

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

Stresses beyond those listed under "Absolute Maximum Ratings" may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated in the operational sections of the specifications is not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

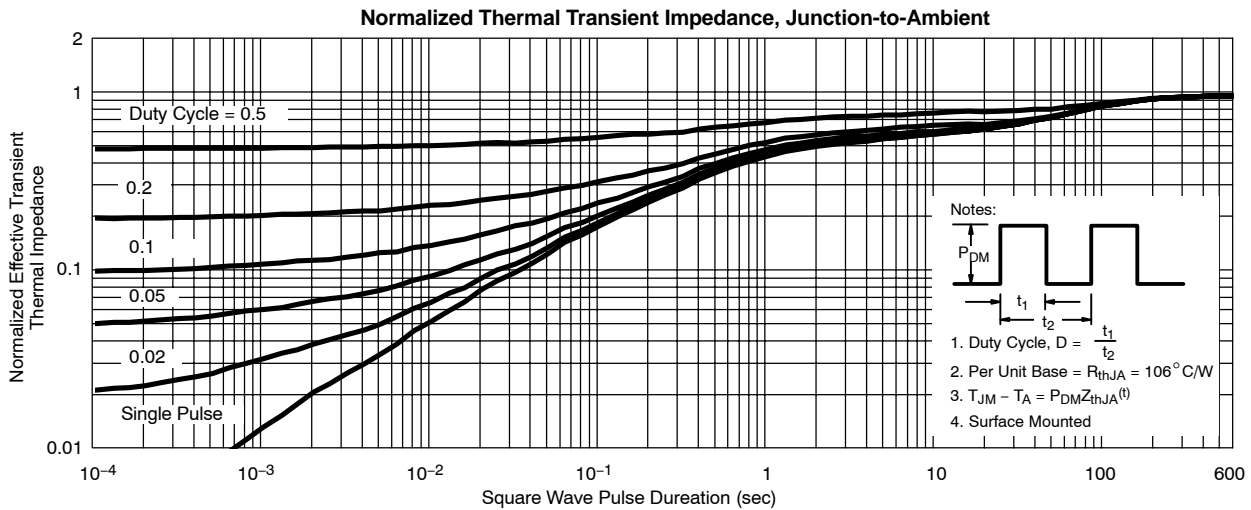
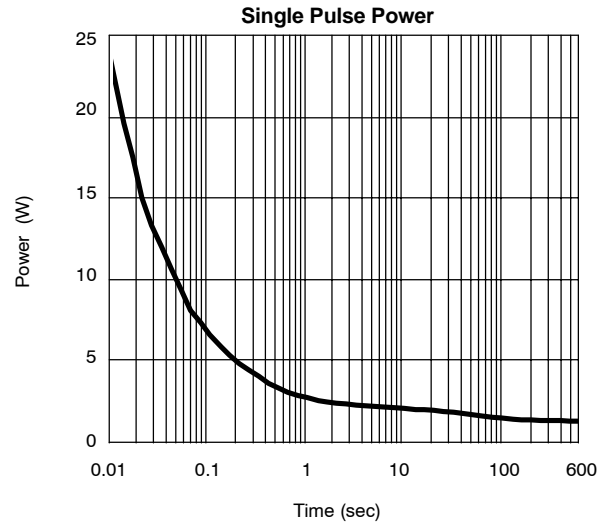
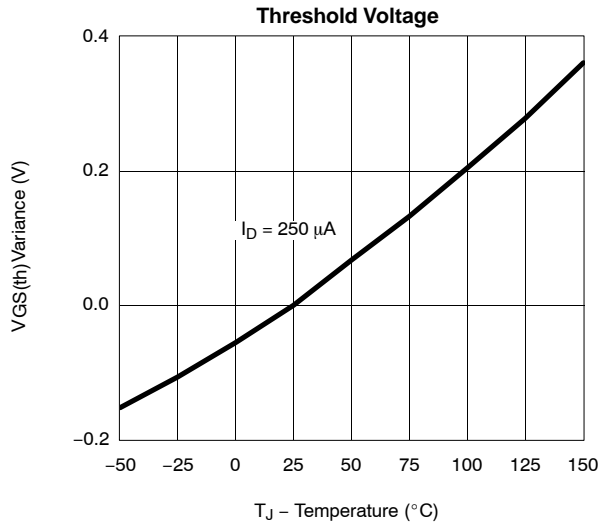
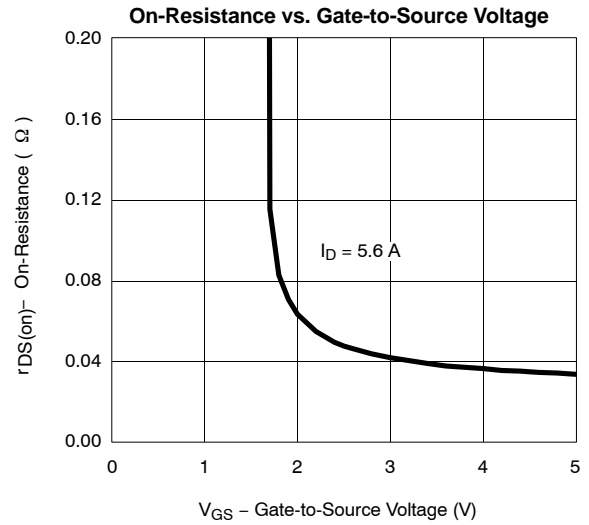
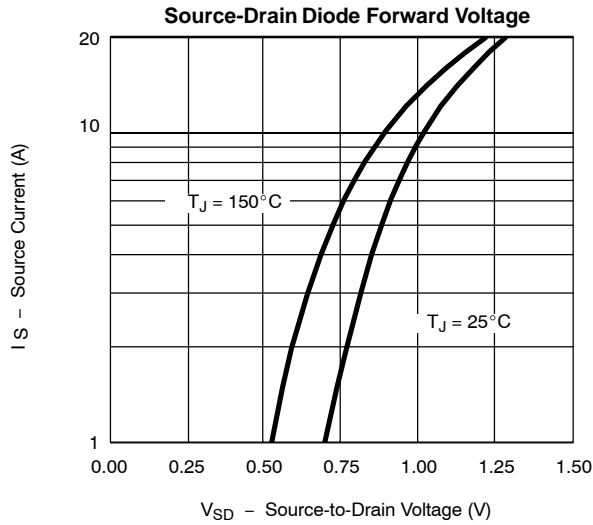


**TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)**





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



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