



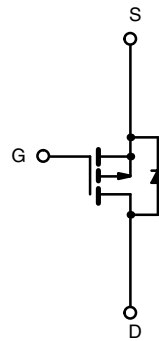
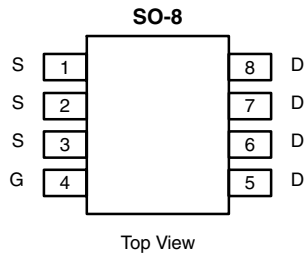
## P-Channel 1.8-V (G-S) MOSFET

PRODUCT SUMMARY		
$V_{DS}$ (V)	$r_{DS(on)}$ ( $\Omega$ )	$I_D$ (A)
-8	0.009 @ $V_{GS} = -4.5$ V	-14
	0.011 @ $V_{GS} = -2.5$ V	-12
	0.016 @ $V_{GS} = -1.8$ V	-10

**TrenchFET<sup>®</sup>**  
Power MOSFETs  
1.8-V Rated



RoHS  
COMPLIANT



Ordering Information: Si4465DY-T1  
Si4465DY-T1-E3 (Lead (Pb)-free)

P-Channel MOSFET

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>	$T_A = 25^\circ\text{C}$	$I_D$	-14	A
	$T_A = 70^\circ\text{C}$		-11	
Pulsed Drain Current		$I_{DM}$	-40	
Continuous Source Current (Diode Conduction) <sup>a, b</sup>		$I_S$	-2.1	
Maximum Power Dissipation <sup>a, b</sup>	$T_A = 25^\circ\text{C}$	$P_D$	2.5	W
	$T_A = 70^\circ\text{C}$		1.6	
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>	$t \leq 10$ sec	$R_{thJA}$		50	$^\circ\text{C/W}$
	Steady State		80		

Notes

- a. Surface Mounted on FR4 Board.  
b.  $t \leq 10$  sec.

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

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
<b>Static</b>						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\ \mu\text{A}$	-0.45		-1.0	V
Gate-Body Leakage	$I_{GSS}$	$V_{DS} = 0\ \text{V}, V_{GS} = \pm 8\ \text{V}$			$\pm 100$	nA
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = -8\ \text{V}, V_{GS} = 0\ \text{V}$			-1	$\mu\text{A}$
		$V_{DS} = -8\ \text{V}, V_{GS} = 0\ \text{V}, T_J = 55^\circ\text{C}$			-5	
On-State Drain Current <sup>a</sup>	$I_{D(on)}$	$V_{DS} \geq -5\ \text{V}, V_{GS} = -4.5\ \text{V}$	-20			A
Drain-Source On-State Resistance <sup>a</sup>	$r_{DS(on)}$	$V_{GS} = -4.5\ \text{V}, I_D = -14\ \text{A}$		0.007	0.009	$\Omega$
		$V_{GS} = -2.5\ \text{V}, I_D = -12\ \text{A}$		0.009	0.011	
		$V_{GS} = -1.8\ \text{V}, I_D = -10\ \text{A}$		0.012	0.016	
Forward Transconductance <sup>a</sup>	$g_{fs}$	$V_{DS} = -10\ \text{V}, I_D = -14\ \text{A}$		60		S
Diode Forward Voltage <sup>a</sup>	$V_{SD}$	$I_S = -2.1\ \text{A}, V_{GS} = 0\ \text{V}$		0.7	-1.2	V
<b>Dynamic<sup>b</sup></b>						
Total Gate Charge	$Q_g$	$V_{DS} = -4\ \text{V}, V_{GS} = -4.5\ \text{V}, I_D = -14\ \text{A}$		80	120	nC
Gate-Source Charge	$Q_{gs}$			15		
Gate-Drain Charge	$Q_{gd}$			9		
Gate Resistance	$R_G$			3.3	5	$\Omega$
Turn-On Delay Time	$t_{d(on)}$	$V_{DD} = -4\ \text{V}, R_L = 4\ \Omega$ $I_D \cong -1\ \text{A}, V_{GEN} = -4.5\ \text{V}, R_G = 6\ \Omega$		45	90	ns
Rise Time	$t_r$			55	110	
Turn-Off Delay Time	$t_{d(off)}$			380	760	
Fall Time	$t_f$			190	380	
Source-Drain Reverse Recovery Time	$t_{rr}$	$I_F = -2.1\ \text{A}, di/dt = 100\ \text{A}/\mu\text{s}$		80	120	

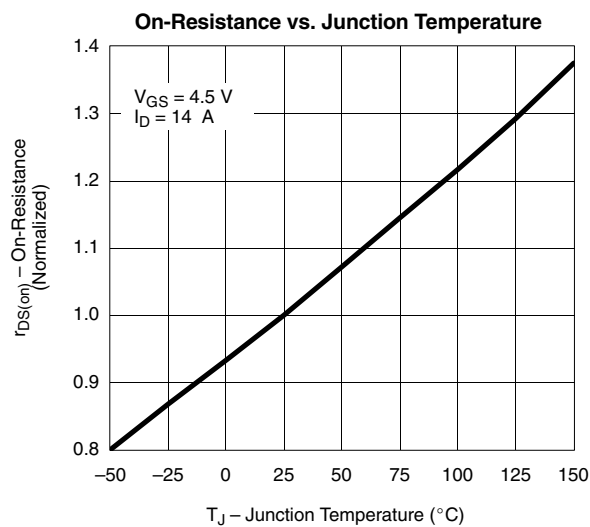
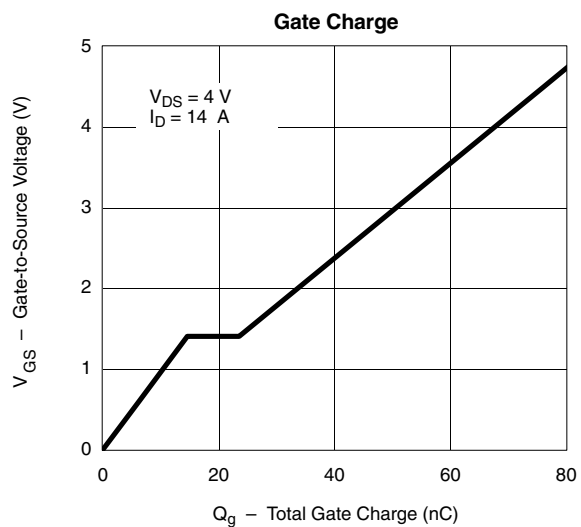
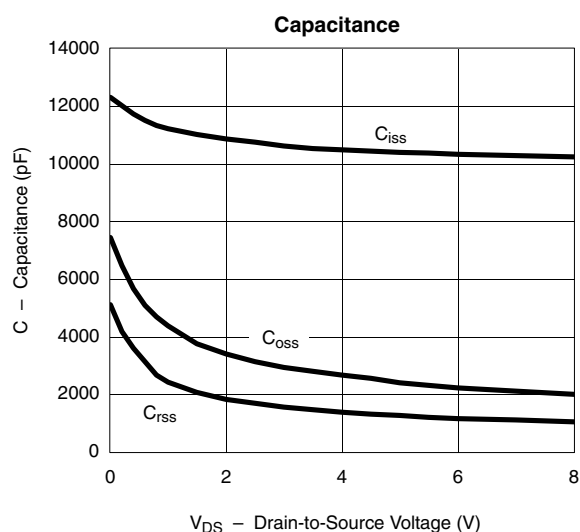
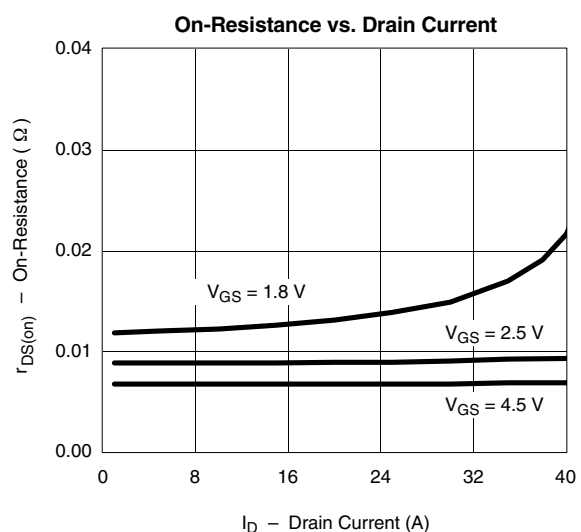
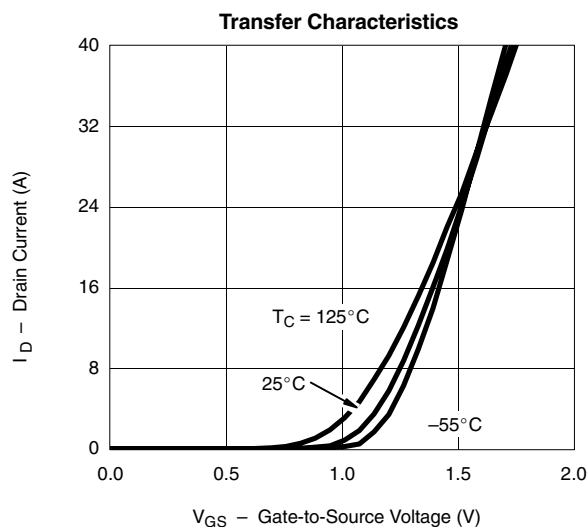
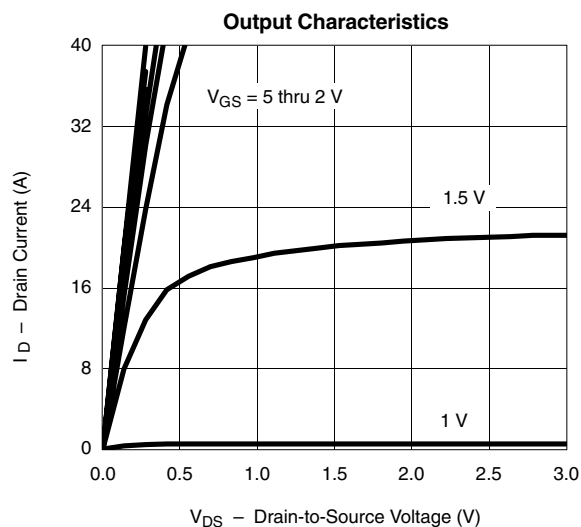
## Notes

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

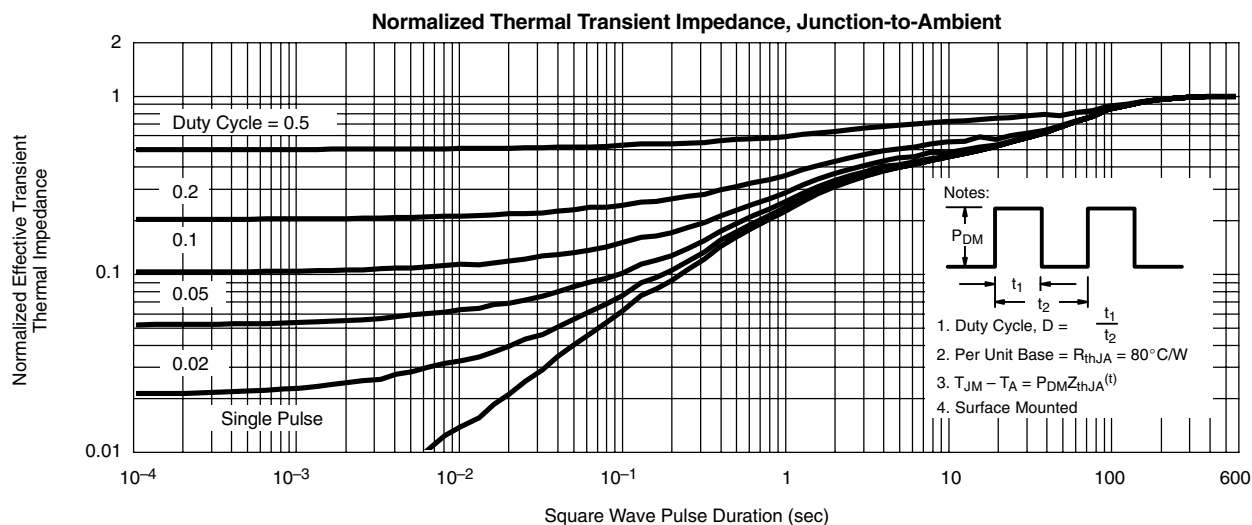
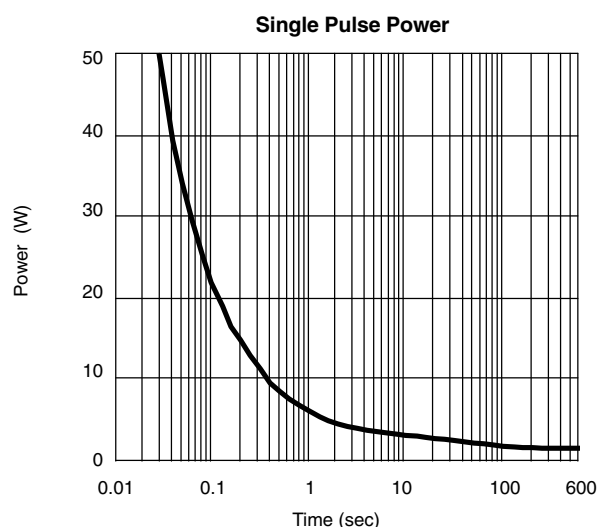
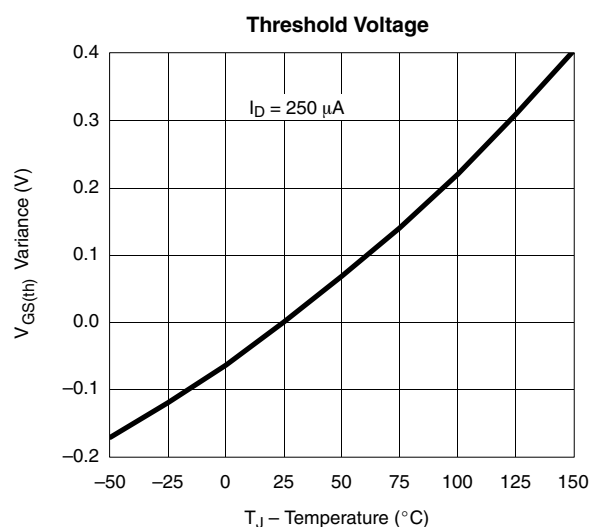
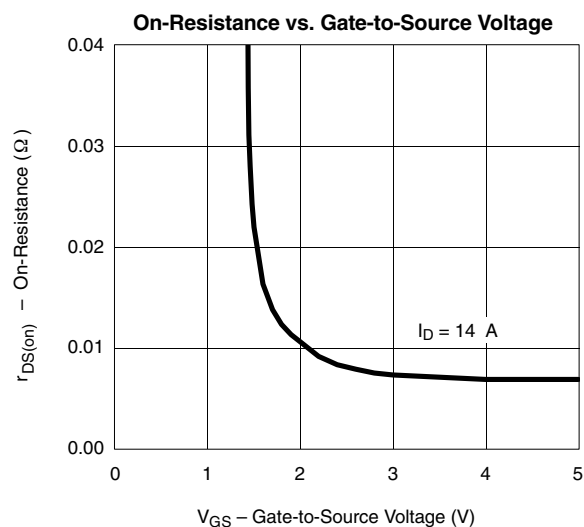
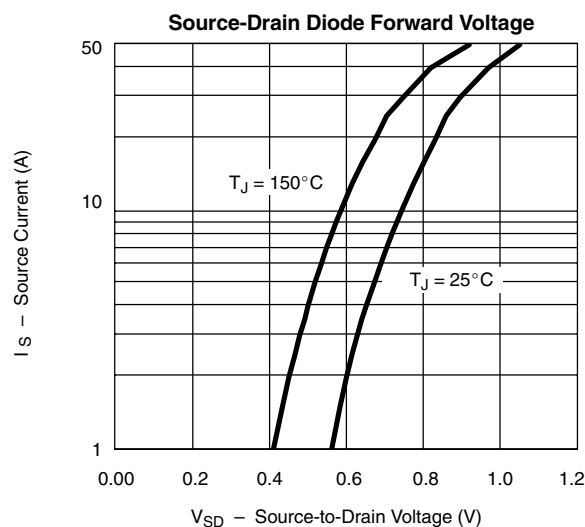
b. Guaranteed by design, not subject to production testing.



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



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