

## P-Channel 30-V (D-S) MOSFET

### PRODUCT SUMMARY

$V_{DS}$ (V)	$R_{DS(on)}$ ( $\Omega$ )	$I_D$ (A)
- 30	0.0085 at $V_{GS} = -10$ V	- 14
	0.014 at $V_{GS} = -4.5$ V	- 11

### FEATURES

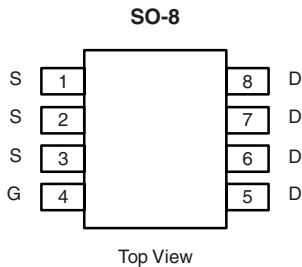
- Halogen-free According to IEC 61249-2-21 Available
- TrenchFET® Power MOSFET
- ESD Protection: 3000 V



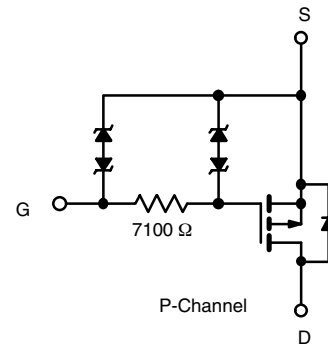
**RoHS**  
COMPLIANT  
HALOGEN  
**FREE**  
Available

### APPLICATIONS

- Notebook PC
- Load Switch
- Adapter Switch



**Ordering Information:** Si4483EDY-T1-E3 (Lead (Pb)-free)  
Si4483EDY-T1-GE3 (Lead (Pb)-free and Halogen-free)



### ABSOLUTE MAXIMUM RATINGS $T_A = 25^\circ\text{C}$ , unless otherwise noted

Parameter	Symbol	10 s	Steady State	Unit
Drain-Source Voltage	$V_{DS}$	- 30		V
Gate-Source Voltage	$V_{GS}$	$\pm 25$		
Continuous Drain Current ( $T_J = 150^\circ\text{C}$ ) <sup>a</sup>	$I_D$	- 14	- 10	A
		- 11	- 8	
Pulsed Drain Current	$I_{DM}$	- 50		
Continuous Source Current (Diode Conduction) <sup>a</sup>	$I_S$	- 2.7	- 1.36	
Maximum Power Dissipation <sup>a</sup>	$P_D$	3.0	1.5	W
		1.9	0.95	
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>	$R_{thJA}$	33	42	$^\circ\text{C/W}$
		70	85	
Maximum Junction-to-Foot (Drain)	$R_{thJF}$	16	21	

Notes:

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

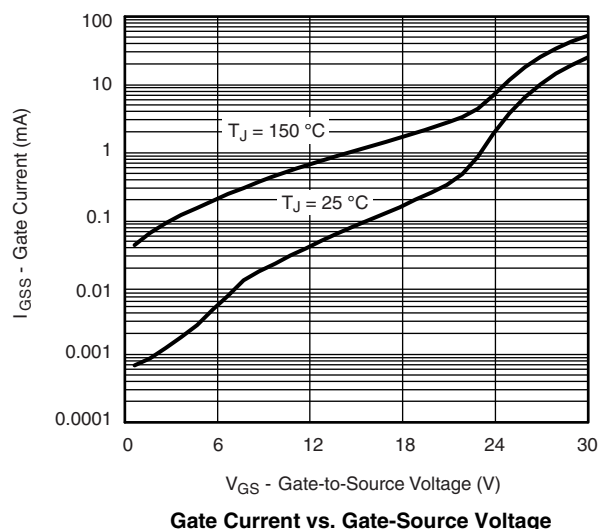
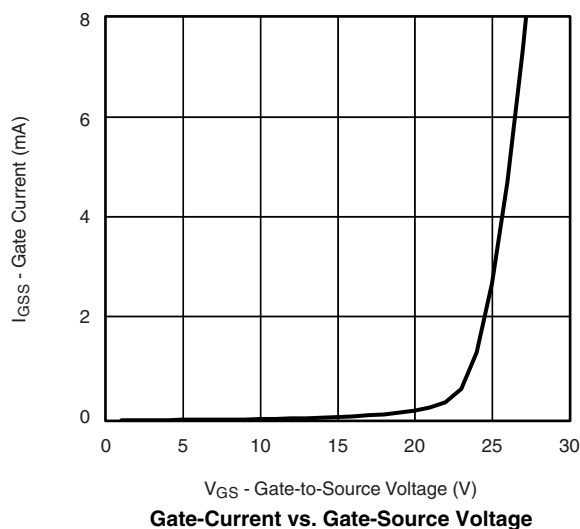
<b>SPECIFICATIONS</b> $T_J = 25\text{ }^{\circ}\text{C}$ , unless otherwise noted						
Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
<b>Static</b>						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}$ , $I_D = -250\text{ }\mu\text{A}$	- 1.0		- 3.0	V
Gate-Body Leakage	$I_{GSS}$	$V_{DS} = 0\text{ V}$ , $V_{GS} = \pm 4.5\text{ V}$			$\pm 1$	$\mu\text{A}$
		$V_{DS} = 0\text{ V}$ , $V_{GS} = \pm 25\text{ V}$			$\pm 10$	mA
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = -30\text{ V}$ , $V_{GS} = 0\text{ V}$			- 1	$\mu\text{A}$
		$V_{DS} = -30\text{ V}$ , $V_{GS} = 0\text{ V}$ , $T_J = 70\text{ }^{\circ}\text{C}$			- 10	
On-State Drain Current <sup>a</sup>	$I_{D(on)}$	$V_{DS} = -5\text{ V}$ , $V_{GS} = -10\text{ V}$	- 30			A
Drain-Source On-State Resistance <sup>a</sup>	$R_{DS(on)}$	$V_{GS} = -10\text{ V}$ , $I_D = -14\text{ A}$		0.007	0.0085	$\Omega$
		$V_{GS} = -4.5\text{ V}$ , $I_D = -11\text{ A}$		0.0115	0.014	
Forward Transconductance <sup>a</sup>	$g_{fs}$	$V_{DS} = -15\text{ V}$ , $I_D = -14\text{ A}$		60		S
Diode Forward Voltage <sup>a</sup>	$V_{SD}$	$I_S = -2.7\text{ A}$ , $V_{GS} = 0\text{ V}$		- 0.74	- 1.1	V
<b>Dynamic<sup>b</sup></b>						
Turn-On Delay Time	$t_{d(on)}$	$V_{DD} = -15\text{ V}$ , $R_L = 15\text{ }\Omega$ $I_D = -1\text{ A}$ , $V_{GEN} = -10\text{ V}$ , $R_g = 6\text{ }\Omega$		10	15	$\mu\text{s}$
Rise Time	$t_r$			20	30	
Turn-Off Delay Time	$t_{d(off)}$			42	65	
Fall Time	$t_f$			50	80	

Notes:

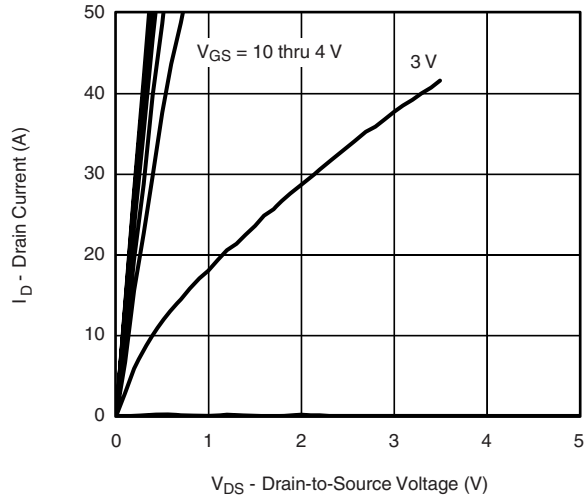
a. Pulse test; pulse width  $\leq 300\text{ }\mu\text{s}$ , duty cycle  $\leq 2\%$ .

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

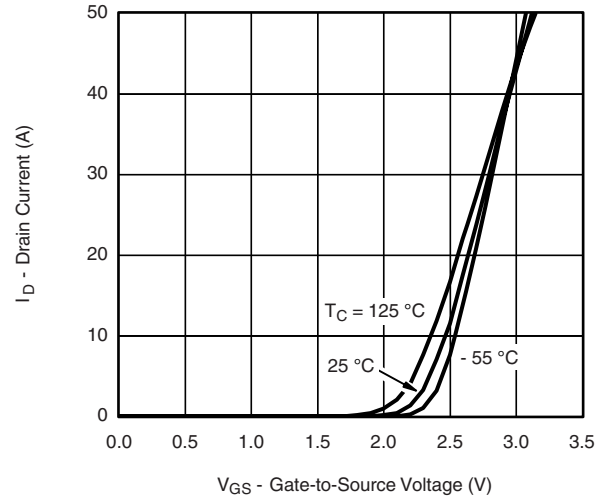
Stresses beyond those listed under "Absolute Maximum Ratings" may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated in the operational sections of the specifications is not implied. Exposure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

**TYPICAL CHARACTERISTICS**  $25\text{ }^{\circ}\text{C}$ , unless otherwise noted

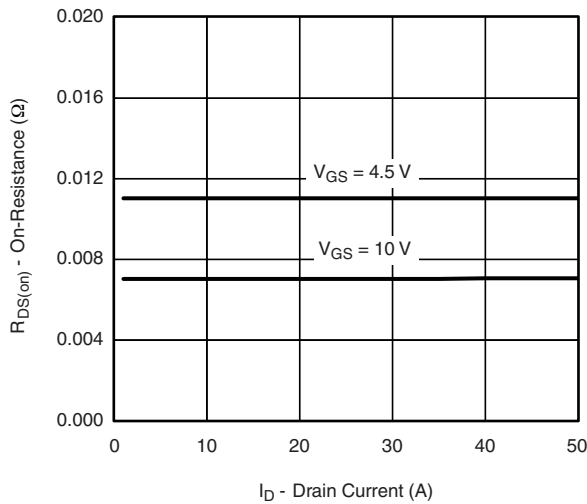
**TYPICAL CHARACTERISTICS** 25 °C, unless otherwise noted



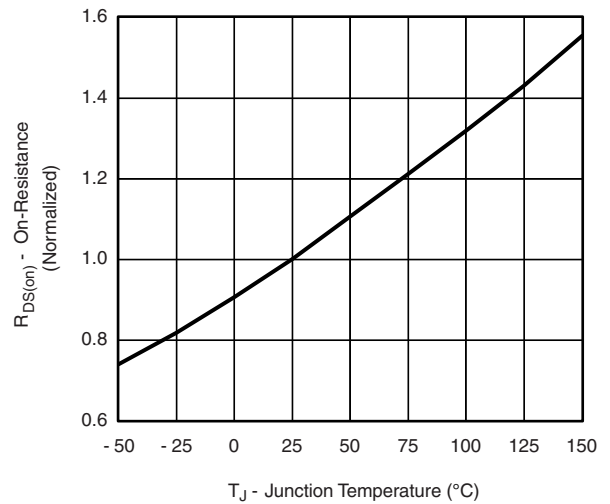
**Output Characteristics**



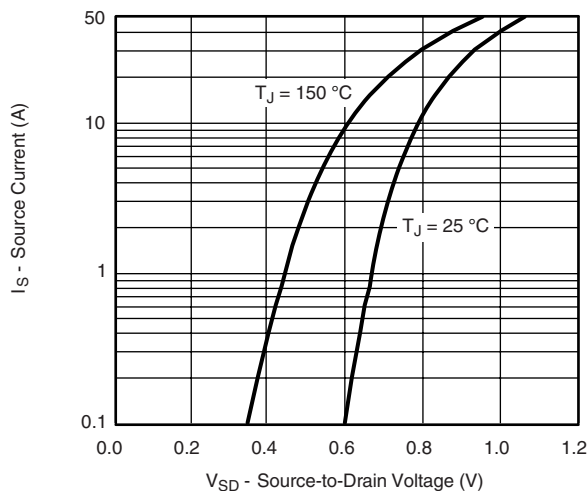
**Transfer Characteristics**



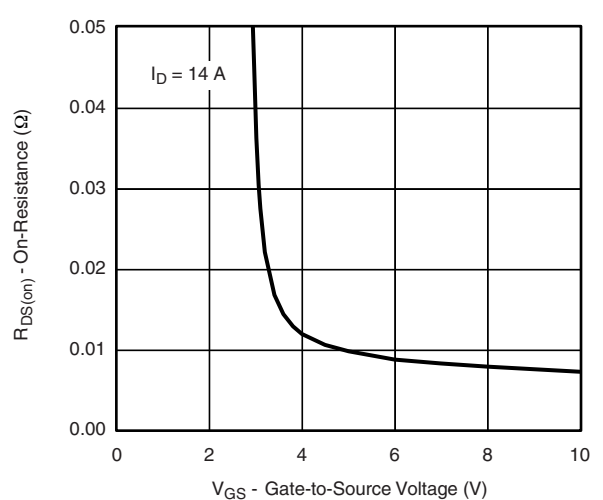
**On-Resistance vs. Drain Current**



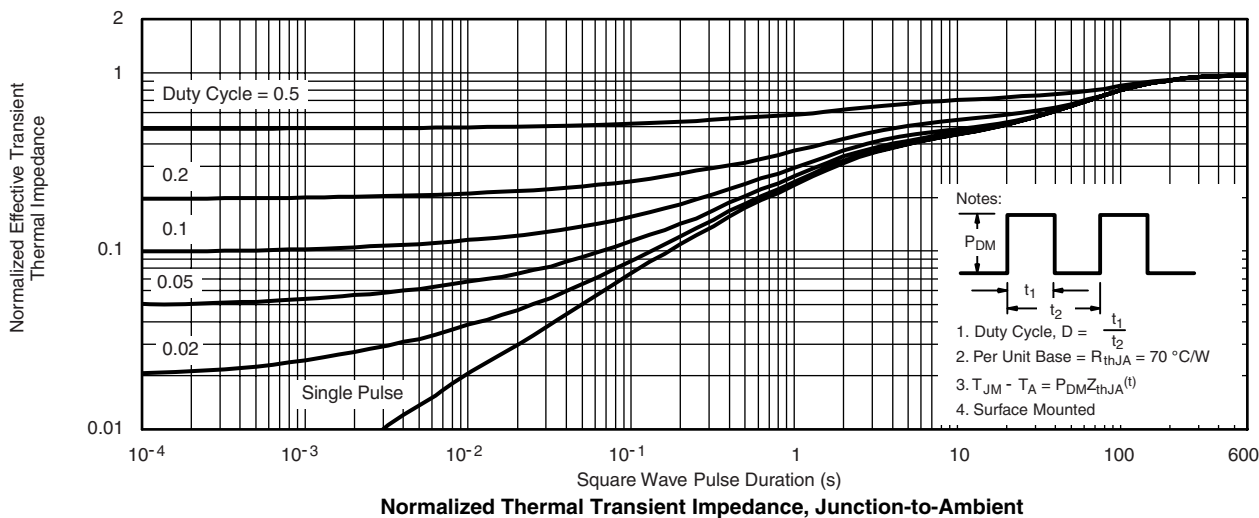
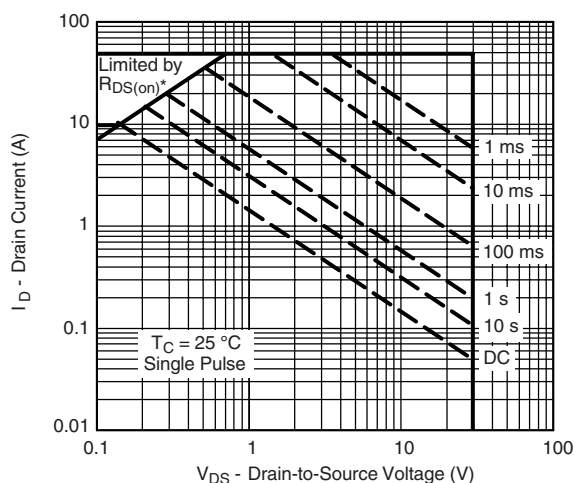
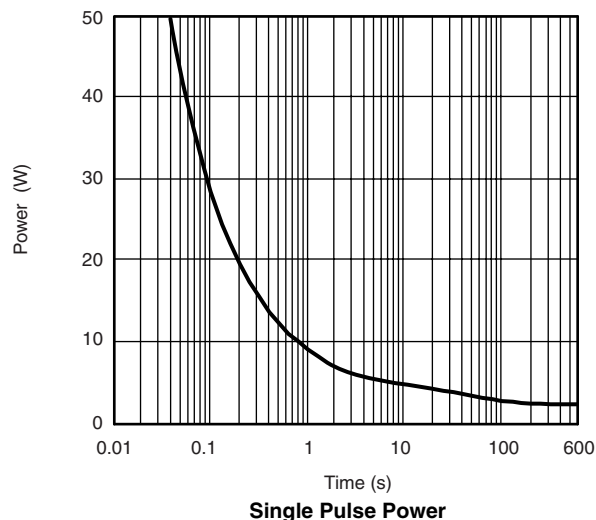
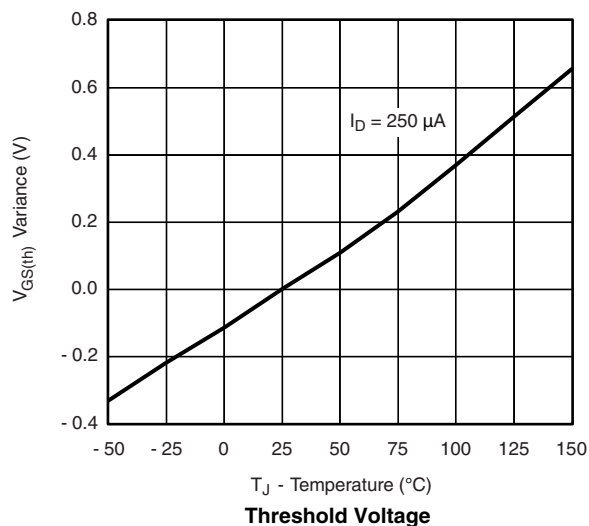
**On-Resistance vs. Junction Temperature**



**Source-Drain Diode Forward Voltage**

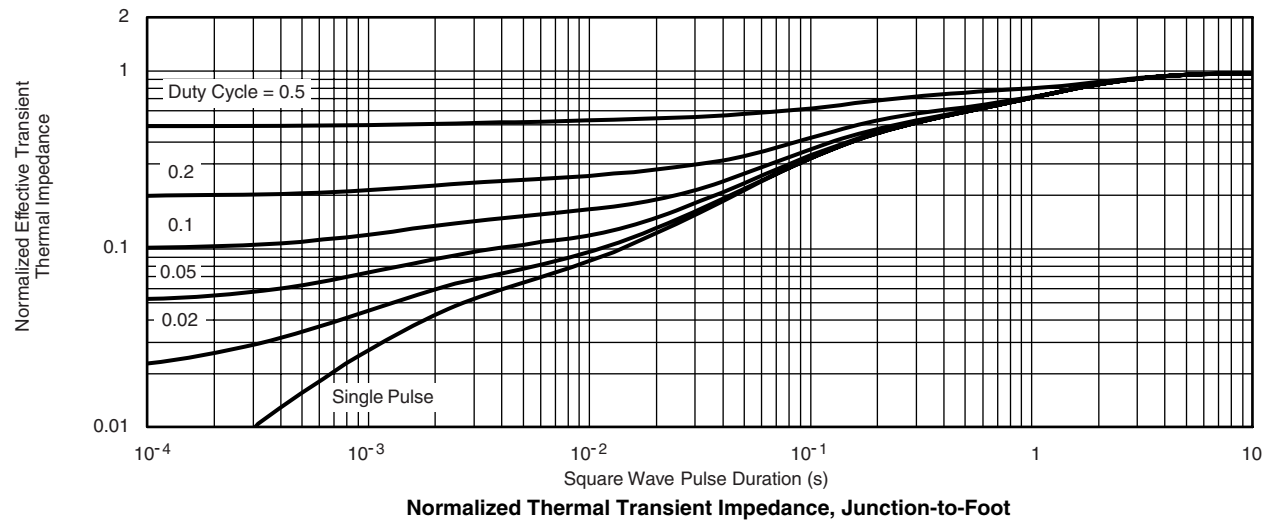


**On-Resistance vs. Gate-to-Source Voltage**

**TYPICAL CHARACTERISTICS** 25 °C, unless otherwise noted



**TYPICAL CHARACTERISTICS** 25 °C, unless otherwise noted



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