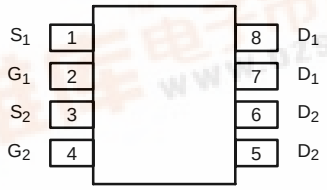
查询SI4946EY供应商 捷多邦，专业PCB打样工厂，24小时加急出货

Dual N-Channel 60-V (D-S), 175°C MOSFET

175°C Rated
Maximum Junction Temperature
TrenchFET®
Power MOSFETs

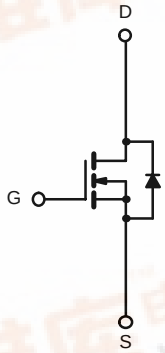
PRODUCT SUMMARY		
V_{DS} (V)	$r_{DS(on)}$ (Ω)	I_D (A)
60	0.055 @ V_{GS} = 10 V	4.5
	0.075 @ V_{GS} = 4.5 V	3.9

SO-8



Top View

Ordering Information: Si4946EY
Si4946EY-T1 (with Tape and Reel)



N-Channel MOSFET

ABSOLUTE MAXIMUM RATINGS (T_A = 25°C UNLESS OTHERWISE NOTED)				
Parameter		Symbol	Limit	Unit
Drain-Source Voltage		V_{DS}	60	V
Gate-Source Voltage		V_{GS}	±20	
Continuous Drain Current (T_J = 175°C)[a]	T_A = 25°C	I_D	4.5	A
	T_A = 70°C		3.8	
Pulsed Drain Current		I_{DM}	30	
Continuous Source Current (Diode Conduction)[a]		I_S	2	
Maximum Power Dissipation[a]	T_A = 25°C	P_D	2.4	W
	T_A = 70°C		1.7	
Operating Junction and Storage Temperature Range		T_J, T_{stg}	-55 to 175	°C

THERMAL RESISTANCE RATINGS			
Parameter	Symbol	Limit	Unit
Maximum Junction-to-Ambient[a]	R_{thJA}	62.5	°C/W

Notes:
a. Surface Mounted on FR4 Board, t ≤ 10 sec.

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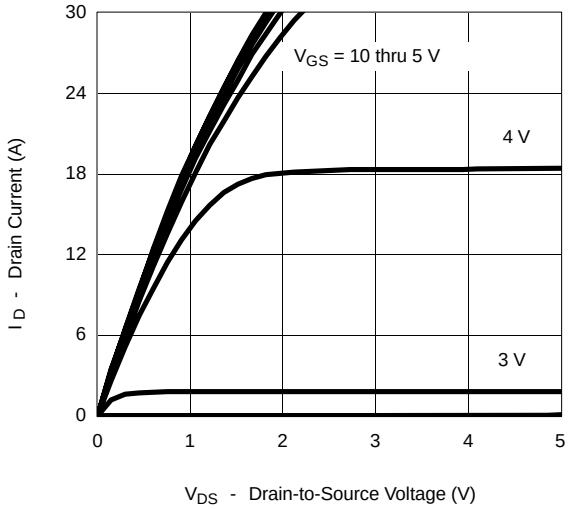
SPECIFICATIONS (T_J = 25°C UNLESS OTHERWISE NOTED)						
Parameter	**Symbol**	**Test Condition**	**Min**	**Typ[a]**	**Max**	**Unit**
Static						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}$, $I_D = 250$ µA	1			V
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0$ V, $V_{GS} = \pm 20$ V			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 60$ V, $V_{GS} = 0$ V			2	µA
		$V_{DS} = 60$ V, $V_{GS} = 0$ V, $T_J = 55$°C			25	
On-State Drain Current[b]	$I_{D(on)}$	$V_{DS} = 5$ V, $V_{GS} = 10$ V	20			A
Drain-Source On-State Resistance[b]	$r_{DS(on)}$	$V_{GS} = 10$ V, $I_D = 4.5$ A		0.045	0.055	Ω
		$V_{GS} = 4.5$ V, $I_D = 3.9$ A		0.055	0.075	
Forward Transconductance[b]	g_{fs}	$V_{DS} = 15$ V, $I_D = 4.5$ A		13		S
Diode Forward Voltage[b]	V_{SD}	$I_S = 2$ A, $V_{GS} = 0$ V		0.9	1.2	V
Dynamic[a]						
Total Gate Charge	Q_g	$V_{DS} = 30$ V, $V_{GS} = 10$ V, $I_D = 4.5$ A		19	30	nC
Gate-Source Charge	Q_{gs}			4		
Gate-Drain Charge	Q_{gd}			3		
Gate Resistance	R_g		1		3.6	Ω
Turn-On Delay Time	$t_{d(on)}$	$V_{DD} = 30$ V, $R_L = 30$ Ω $I_D \cong 1$ A, $V_{GEN} = 10$ V, $R_G = 6$ Ω		13	20	ns
Rise Time	t_r			11	20	
Turn-Off Delay Time	$t_{d(off)}$			36	60	
Fall Time	t_f			11	20	
Source-Drain Reverse Recovery Time	t_{rr}	$I_F = 2$ A, di/dt = 100 A/µs		35	60	

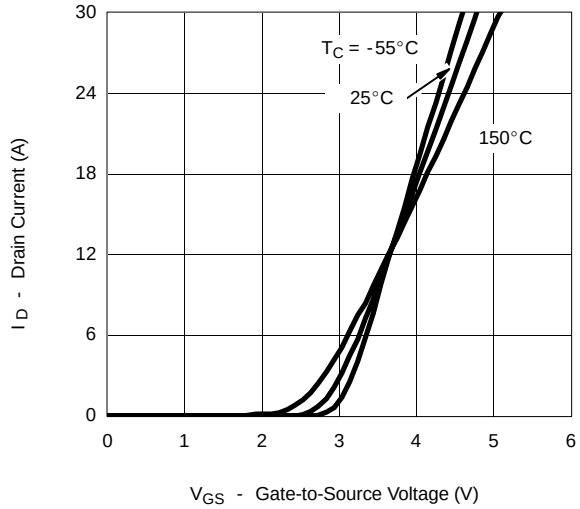
Notes
a. For design aid only; not subject to production testing.
b. Pulse test; pulse width ≤ 300 µs, duty cycle ≤ 2%.

TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

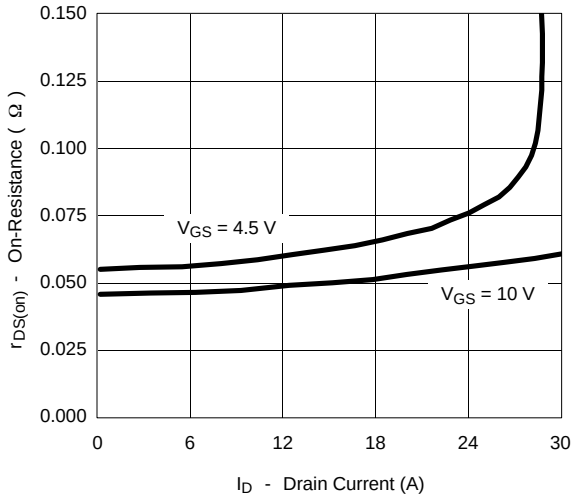
Output Characteristics



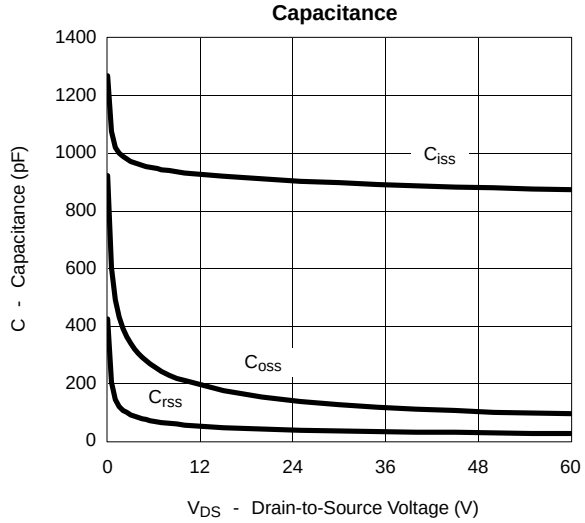
Transfer Characteristics



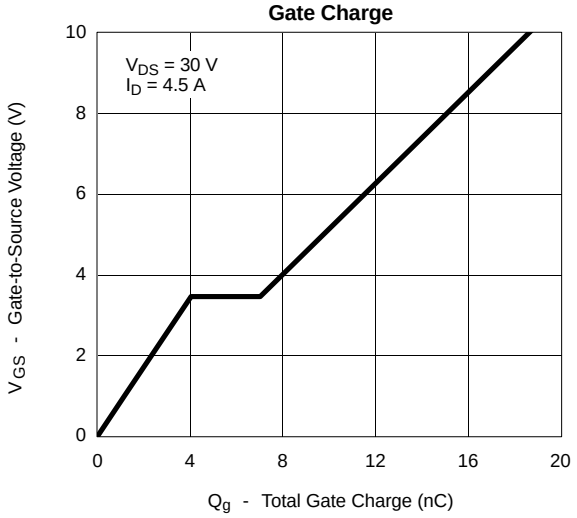
On-Resistance vs. Drain Current



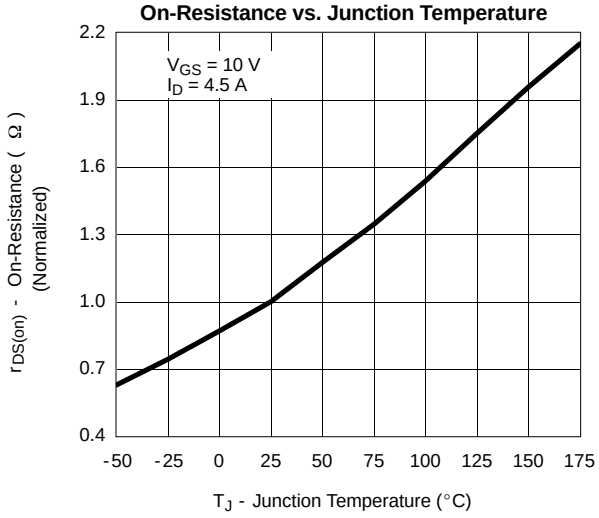
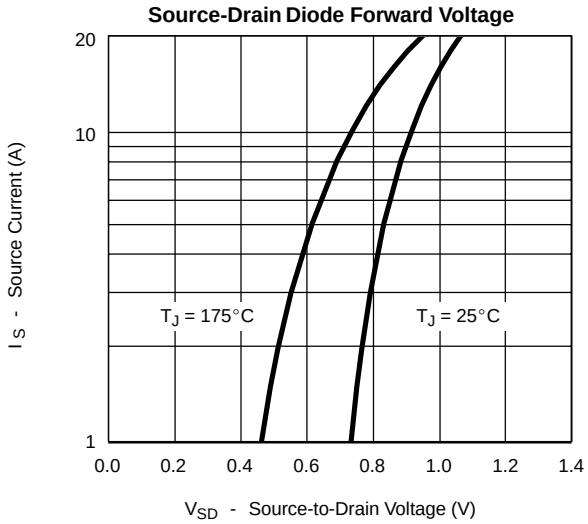
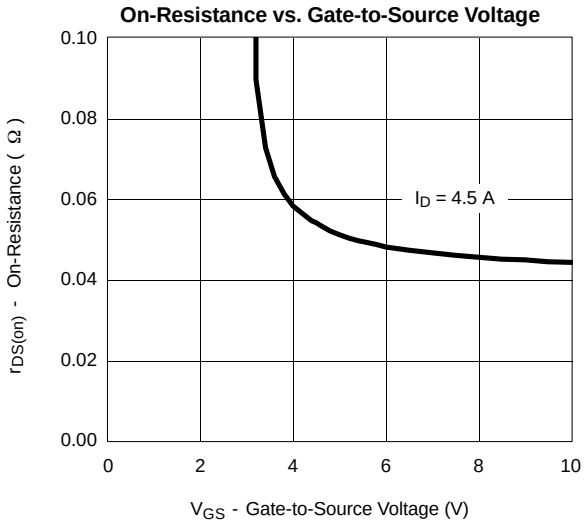
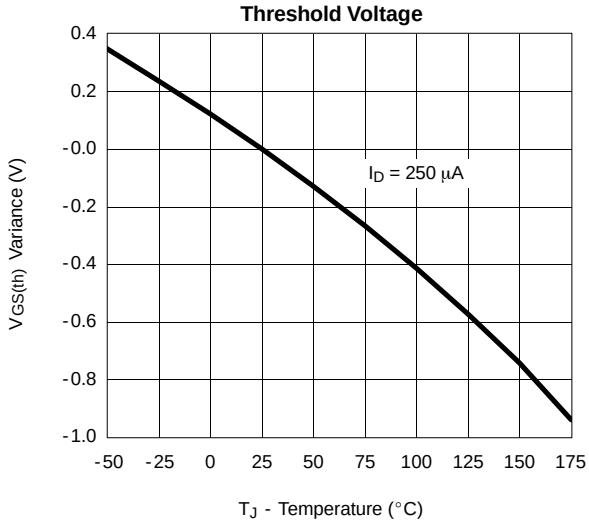
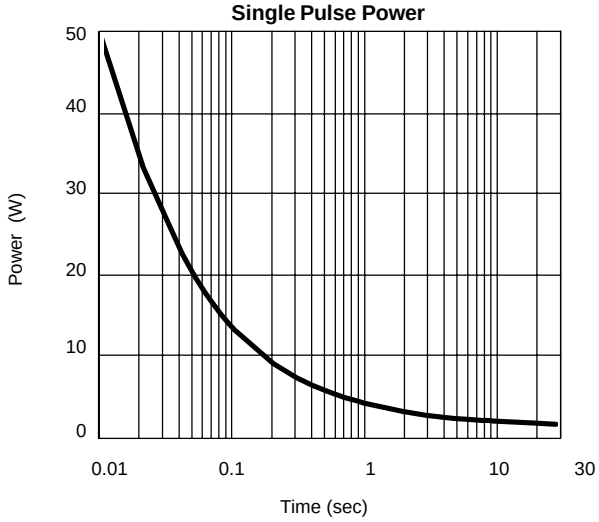
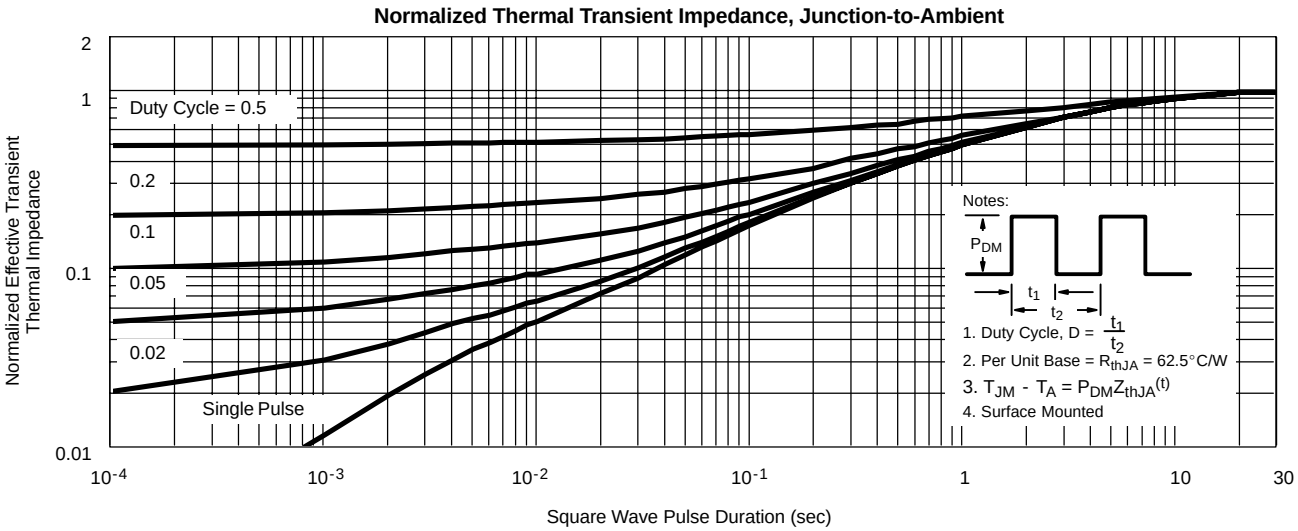
Capacitance



Gate Charge



On-Resistance vs. Junction Temperature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