

**Si9945AEY****Siliconix**

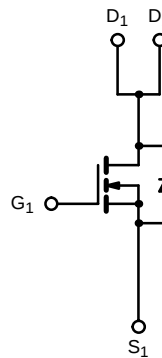
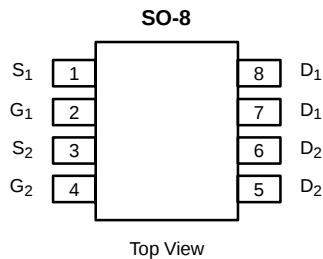
Dual N-Channel 60-V (D-S), 175°C MOSFET

New Product

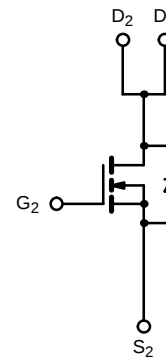
PRODUCT SUMMARY

V _{DS} (V)	R _{DS(on)} (Ω)	I _D (A)
60	0.080 @ V _{GS} = 10 V	± 3.7
	0.100 @ V _{GS} = 4.5 V	± 3.4

175°C Rated
Maximum Junction Temperature
TrenchFET®
Power MOSFETs



N-Channel MOSFET



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	± 3.7	A
	T _A = 70°C		± 3.2	
Pulsed Drain Current		I _{DM}	25	
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	TYP	MAX	UNIT
Junction-to-Ambient ^A	t ≤ 10 sec	R _{thJA}		62.5	°C/W
	Steady State		93		

Notes

A. Surface Mounted on 1" x 1" FR4 Board

Updates to this data sheet may be obtained via facsimile by calling Siliconix FaxBack, 1-408-970-5600. Please request FaxBack document #70758.

**SPECIFICATIONS (T_J = 25°C UNLESS OTHERWISE NOTED)**

PARAMETER	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
STATIC						
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250 μA	1.0			V
Gate-Body Leakage	I _{GSS}	V _{DS} = 0 V, V _{GS} = ±20 V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 60 V, V _{GS} = 0 V			1	μA
		V _{DS} = 60 V, V _{GS} = 0 V, T _J = 55°C			10	
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 = 3.7 A		0.06	0.080	Ω
		V _{GS} = 4.5 V, I _D = 3.4 A		0.075	0.100	
Forward Transconductance ^B	g _{fs}	V _{DS} = 15 V, I _D = 3.7 A		11		S
Diode Forward Voltage ^B	V _{SD}	I _S = 2.0 A, V _{GS} = 0 V			1.2	V
DYNAMIC^A						
Total Gate Charge	Q _g	V _{DS} = 30 V, V _{GS} = 10 V, I _D = 3.7 A		11	20	nC
Gate-Source Charge	Q _{gs}			2		
Gate-Drain Charge	Q _{gd}			2		
Turn-On Delay Time	t _{d(on)}	V _{DD} = 30 V, R _L = 30 Ω I _D ≅ 1 A, V _{GEN} = 10 V, R _G = 6 Ω		9	20	ns
Rise Time	t _r			10	20	
Turn-Off Delay Time	t _{d(off)}			21	40	
Fall Time	t _f			8	20	
Source-Drain Reverse Recovery Time	t _{rr}	I _F = 2.0 A, di/dt = 100 A/μs		45	80	

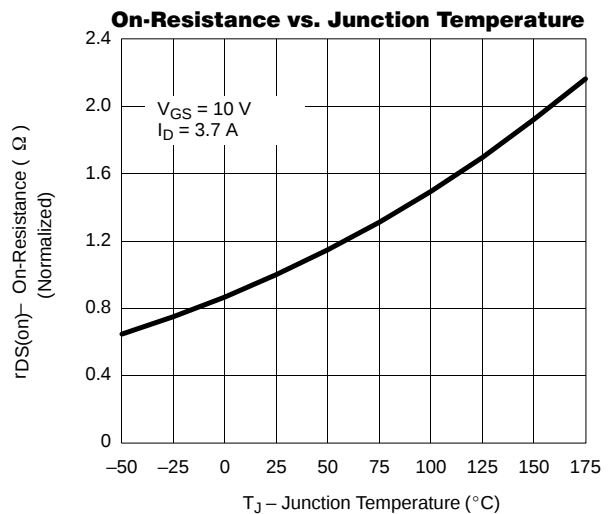
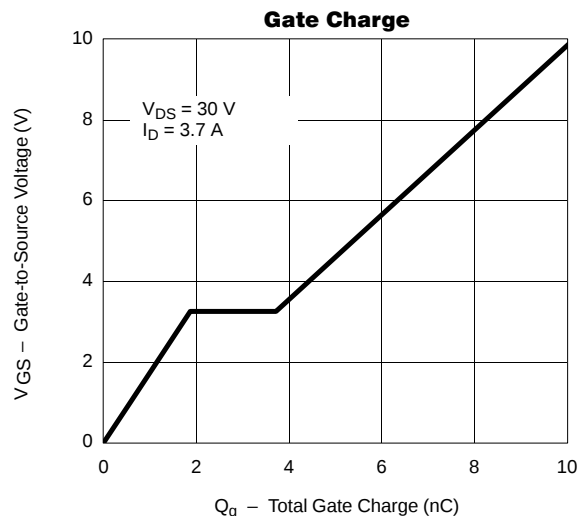
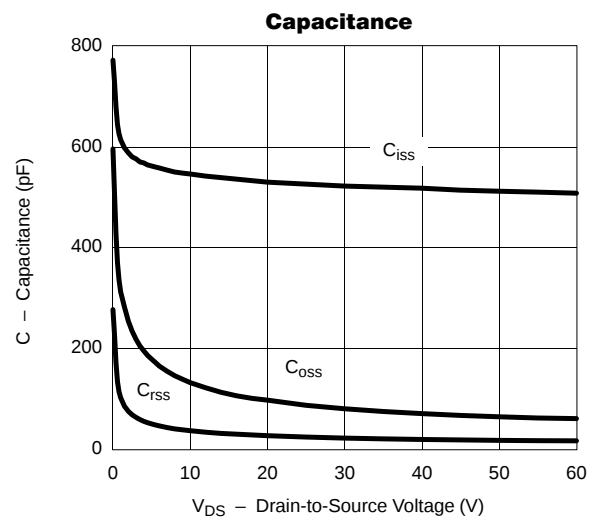
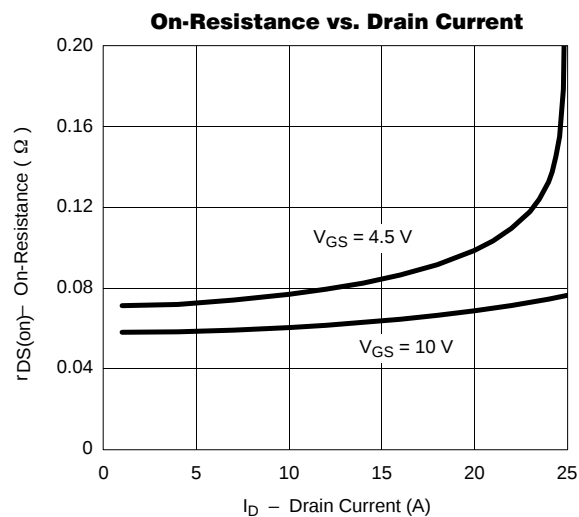
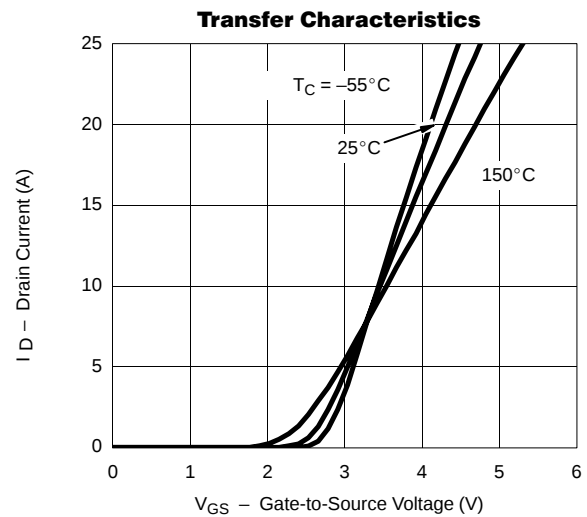
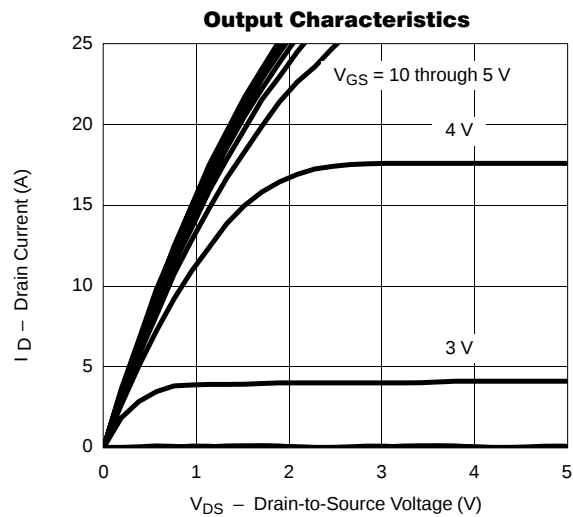
Notes

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

B. Pulse test; pulse width ≤ 300 μs, duty cycle ≤ 2%.



TYPICAL CHARACTERISTICS (25°C UNLESS OTHERWISE NOTED)



TYPICAL CHARACTERISTICS (25°C UNLESS OTHERWISE NOTED)

