



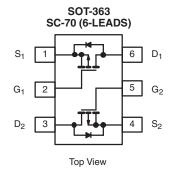
Dual P-Channel 2.5-V (G-S) MOSFET

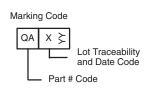
PRODUCT SUMMARY				
V _{DS} (V)	$R_{DS(on)}(\Omega)$	I _D (A)		
	0.995 at V _{GS} = - 4.5 V	± 0.44		
- 20	1.190 at V _{GS} = - 3.6 V	± 0.40		
	1.8 at V _{GS} = - 2.5 V	± 0.32		

FEATURES

- Halogen-free According to IEC 61249-2-21 Definition
- TrenchFET[®] Power MOSFETs
- 2.5 V Rated
- Compliant to RoHS Directive 2002/95/EC







Ordering Information: Si1903DL-T1-E3 (Lead (Pb)-free)

Si1903DL-T1-GE3 (Lead (Pb)-free and Halogen-free)

ABSOLUTE MAXIMUM RATINGS $T_A = 2$	Symbol	5 s	Steady State	Unit		
Drain-Source Voltage		V _{DS}	- 20		V	
Gate-Source Voltage		V_{GS}	± 12			
Continuous Dusin Comment /T 450 °C\8	T _A = 25 °C	- I _D	± 0.44	± 0.41	Α	
Continuous Drain Current (T _J = 150 °C) ^a	T _A = 85 °C		± 0.31	± 0.30		
Pulsed Drain Current		I _{DM}	± 1.0		А	
Continuous Diode Current (Diode Conduction) ^a		I _S	- 0.25	- 0.23		
Maximum Power Dissipation ^a	T _A = 25 °C	P _D	0.30	0.27	W	
	T _A = 85 °C		0.16	0.14	"	
Operating Junction and Storage Temperature Range		T _J , T _{stq}	- 55 to 150		°C	

THERMAL RESISTANCE RATINGS					
Parameter		Symbol	Typical	Maximum	Unit
Manipulation to Applicate	t ≤ 5 s	R _{thJA}	360	415	°C/W
Maximum Junction-to-Ambient ^a	Steady State		400	460	
Maximum Junction-to-Foot (Drain)	Steady State	R _{thJF}	300	350	

Notes:

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

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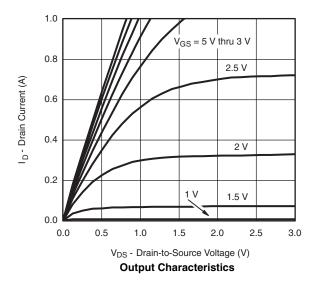
SPECIFICATIONS T _J = 25 °C, unless otherwise noted							
Parameter	Symbol	Test Conditions	Min.	Тур.	Max.	Unit	
Static							
Gate Threshold Voltage	V _{GS(th)}	$V_{DS} = V_{GS, I_D} = -250 \mu A$	- 0.6		1.5	V	
Gate-Body Leakage	I _{GSS}	$V_{DS} = 0 \text{ V}, V_{GS} = \pm 12 \text{ V}$			± 100	nA	
Zero Gate Voltage Drain Current	I _{DSS}	$V_{DS} = -20 \text{ V}, V_{GS} = 0 \text{ V}$			- 1	μА	
Zero Gate voltage Drain Current		$V_{DS} = -20 \text{ V}, V_{GS} = 0 \text{ V}, T_{J} = 85 ^{\circ}\text{C}$			- 5		
On-State Drain Current ^a	I _{D(on)}	$V_{DS} = -5 \text{ V}, V_{GS} = -4.5 \text{ V}$	- 1.0			Α	
		$V_{GS} = -4.5 \text{ V}, I_D = -0.41 \text{ A}$		0.850	0.995		
Drain-Source On-State Resistance ^a	R _{DS(on)}	$V_{GS} = -3.6 \text{ V}, I_D = -0.38 \text{ A}$		1.0	1.190	Ω	
		V _{GS} = - 2.5 V, I _D = - 0.25 A		1.4	1.80		
Forward Transconductancea	9 _{fs}	$V_{DS} = -10 \text{ V}, I_{D} = -0.41 \text{ A}$		0.8		S	
Diode Forward Voltage ^a	V _{SD}	$I_S = -0.23 \text{ A}, V_{GS} = 0 \text{ V}$		- 0.8	- 1.2	V	
Dynamic ^b							
Total Gate Charge	Q_g			1.2	1.8		
Gate-Source Charge	Q_{gs}	Q_{gs} $V_{DS} = -10 \text{ V}, V_{GS} = -4.5 \text{ V}, I_D = -0.41 \text{ A}$		0.45		nC	
Gate-Drain Charge	Q_{gd}			0.25			
Turn-On Delay Time	t _{d(on)}			7.5	15		
Rise Time	t _r	$V_{DD} = -10 \text{ V}, R_{L} = 20 \Omega$		20	40		
Turn-Off DelayTime	t _{d(off)}	$I_{D} \cong -0.5 \text{ A}, V_{GEN} = -4.5 \text{ V}, R_{g} = 6 \Omega$		8.5	17	ns	
Fall Time	t _f]		12	24		
Source-Drain Reverse Recovery Time	t _{rr}	I _F = - 0.23 A, dl/dt = 100 A/μs		25	40		

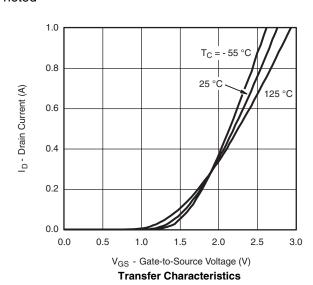
Notes:

- a. Pulse test; pulse width \leq 300 μ 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 °C, unless otherwise noted



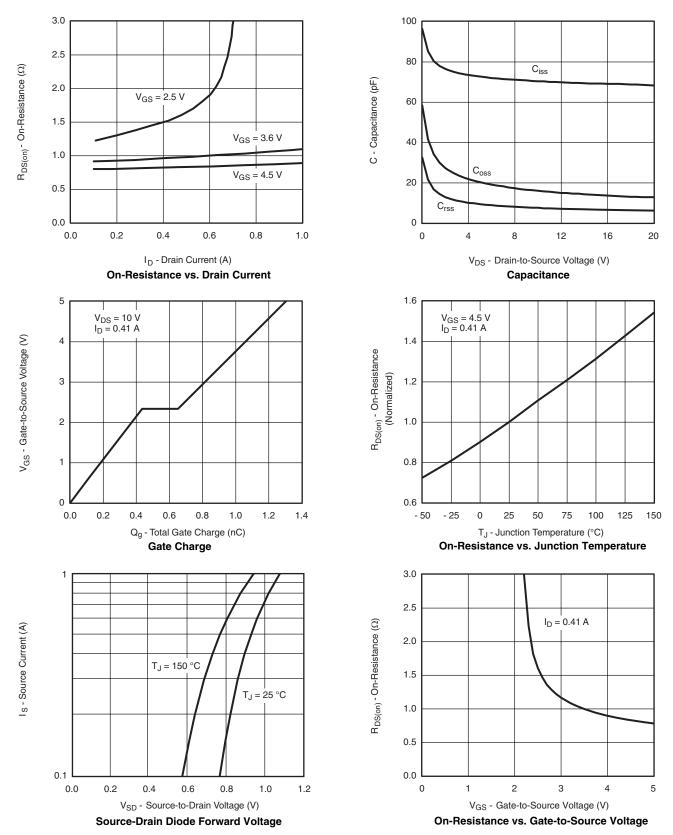








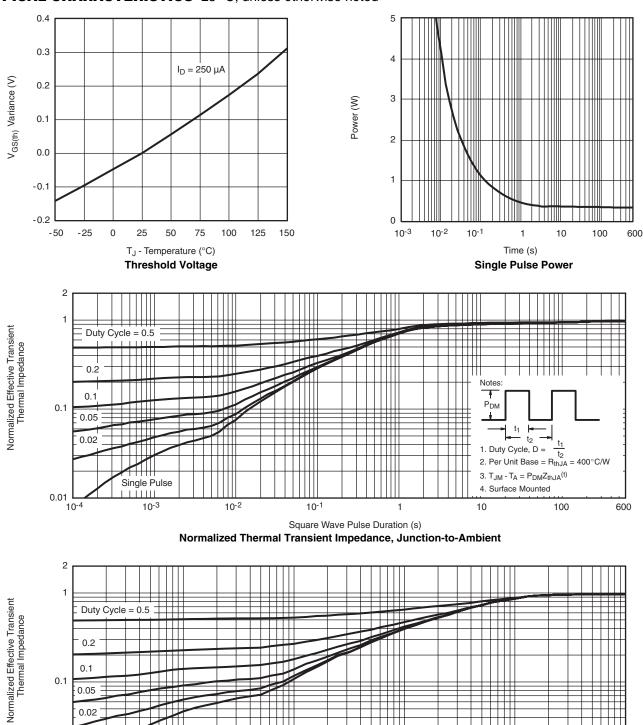
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TYPICAL CHARACTERISTICS 25 °C, unless otherwise noted



Square Wave Pulse Duration (s) Normalized Thermal Transient Impedance, Junction-to-Foot

10⁻¹

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10-2

0.01

Single Pulse

10-3

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