Dual N-Channel 25-V (D-S) MOSFET

PRODUCT SUMMARY		
V_{DS} (V)	$r_{DS(on)}$ (Ω)	I_D (A)
25	0.810 @ V_{GS} = 4.5 V	0.73
	1.04 @ V_{GS} = 2.5 V	0.65

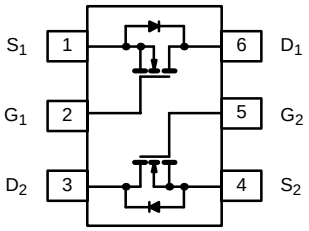
FEATURES

- TrenchFET® Power MOSFETS: 2.5-V Rated
- ESD Protected: 1800 V
- Thermally Enhanced SC-70 Package

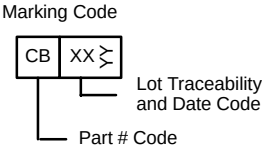
APPLICATIONS

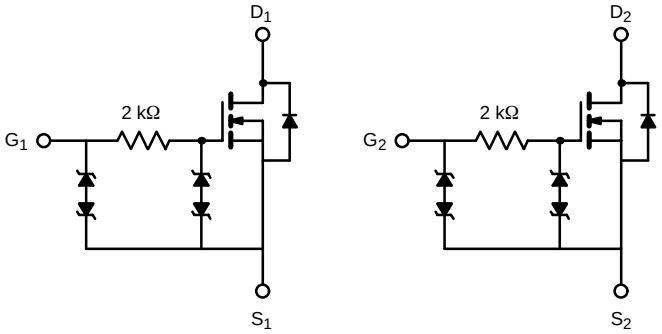
- Load Switching
- PA Switch
- Level Switch

SOT-363
SC-70 (6-LEADS)



Top View





ABSOLUTE MAXIMUM RATINGS (T_A = 25°C UNLESS OTHERWISE NOTED)					
Parameter		Symbol	5 secs	Steady State	Unit
Drain-Source Voltage		V_{DS}	25		V
Gate-Source Voltage		V_{GS}	±8		
Continuous Drain Current (T_J = 150°C)[a]	T_A = 25°C	I_D	0.73	0.64	A
	T_A = 85°C		0.53	0.46	
Pulsed Drain Current		I_{DM}	2		
Continuous Diode Current (Diode Conduction)[a]		I_S	0.61	0.48	
Maximum Power Dissipation[a]	T_A = 25°C	P_D	0.74	0.57	W
	T_A = 85°C		0.38	0.30	
Operating Junction and Storage Temperature Range		T_J, T_{stg}	–55 to 150		°C

THERMAL RESISTANCE RATINGS					
Parameter		Symbol	Typical	Maximum	Unit
Maximum Junction-to-Ambient[a]	t ≤ 5 sec	R_{thJA}	130	170	°C/W
	Steady State		170	220	
Maximum Junction-to-Foot (Drain)	Steady State	R_{thJF}	80	100	

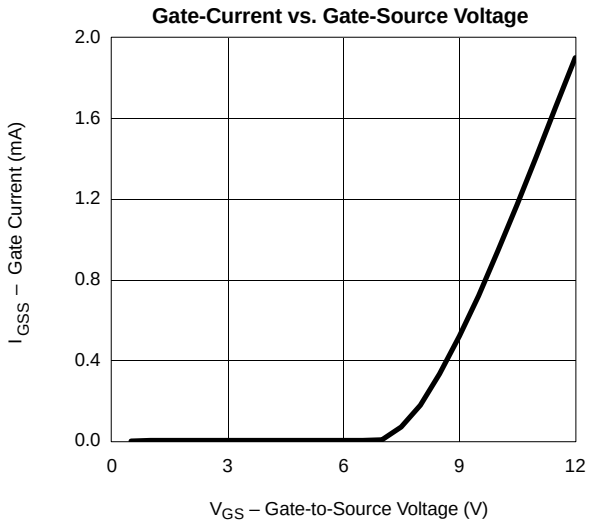
Notes
a. Surface Mounted on 1” x 1” FR4 Board.

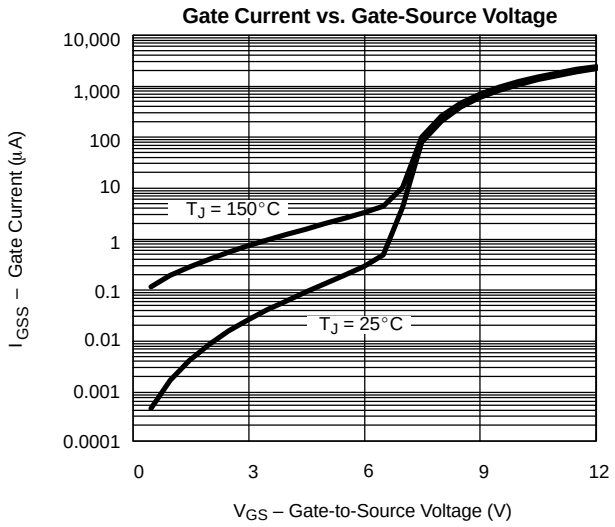
SPECIFICATIONS (T_J = 25°C UNLESS OTHERWISE NOTED)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static						
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = 250 μA	0.6			V
Gate-Body Leakage	I_{GSS}	V_{DS} = 0 V, V_{GS} = ±4.5 V			±1	μA
		V_{DS} = 0 V, V_{GS} = ±8 V			±1	mA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = 20 V, V_{GS} = 0 V			1	μA
		V_{DS} = 20 V, V_{GS} = 0 V, T_J = 85°C			5	
On-State Drain Current[a]	$I_{D(on)}$	V_{DS} = 5 V, V_{GS} = 4.5 V	2			A
Drain-Source On-State Resistance[a]	$r_{DS(on)}$	V_{GS} = 4.5 V, I_D = 0.64 A		0.630	0.810	Ω
		V_{GS} = 2.5 V, I_D = 0.2 A		0.830	1.04	
Forward Transconductance[a]	g_{fs}	V_{DS} = 10 V, I_D = 0.64 A		1.1		S
Diode Forward Voltage[a]	V_{SD}	I_S = 0.48 A, V_{GS} = 0 V		0.80	1.2	V
Dynamic[b]						
Total Gate Charge	Q_g	V_{DS} = 15 V, V_{GS} = 4.5 V, I_D = 0.64 A		0.66	1.0	nC
Gate-Source Charge	Q_{gs}			0.14		
Gate-Drain Charge	Q_{gd}			0.26		
Turn-On Delay Time	$t_{d(on)}$	V_{DD} = 15 V, R_L = 30 Ω I_D ≅ 0.5 A, V_{GEN} = 4.5 V, R_G = 6 Ω		42	65	ns
Rise Time	t_r			85	130	
Turn-Off Delay Time	$t_{d(off)}$			200	300	
Fall Time	t_f			160	240	

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

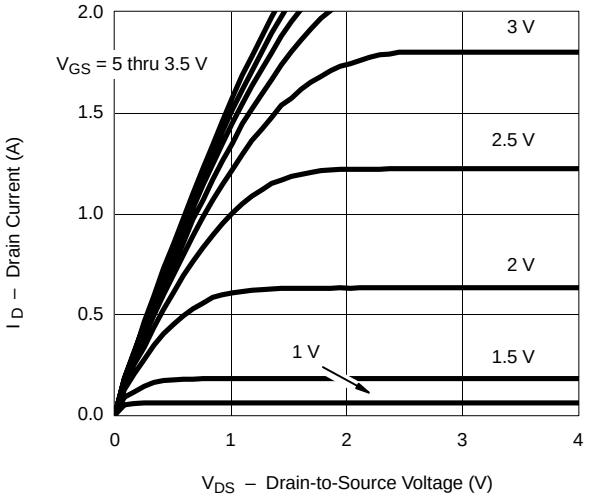
TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)



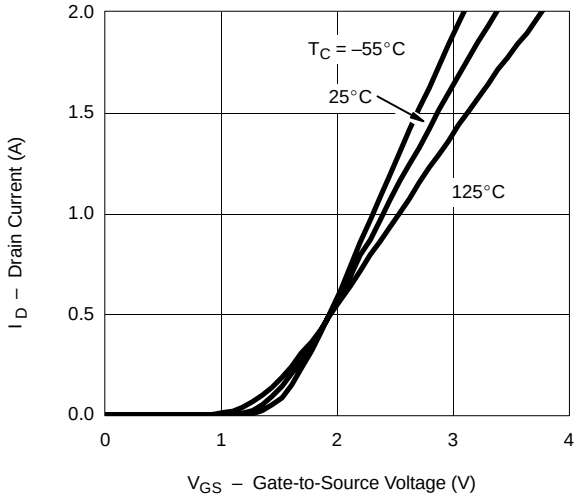


TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

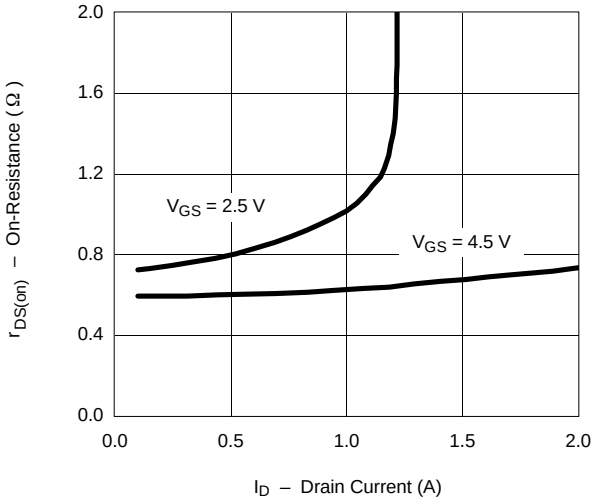
Output Characteristics



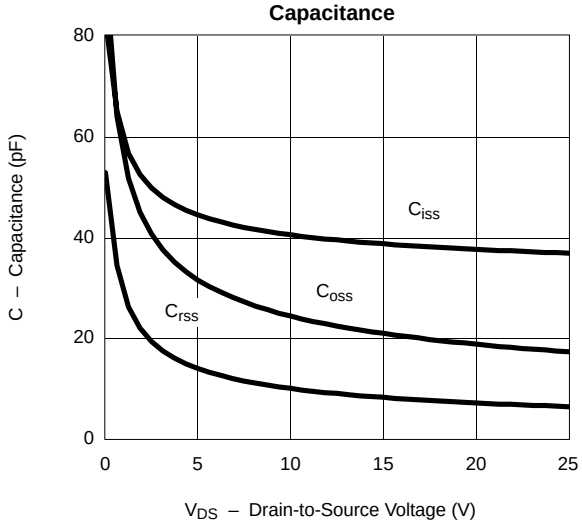
Transfer Characteristics



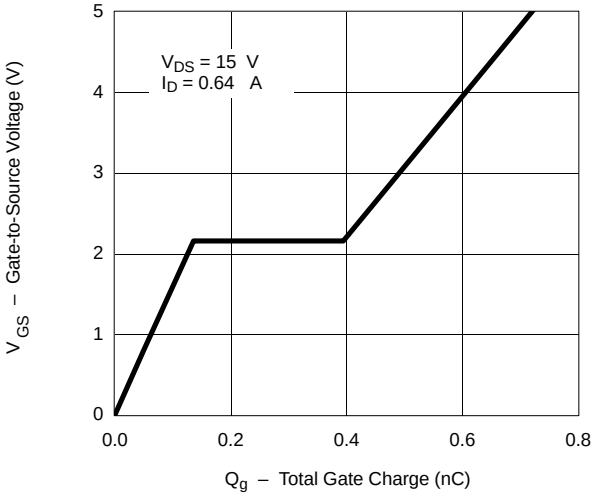
On-Resistance vs. Drain Current



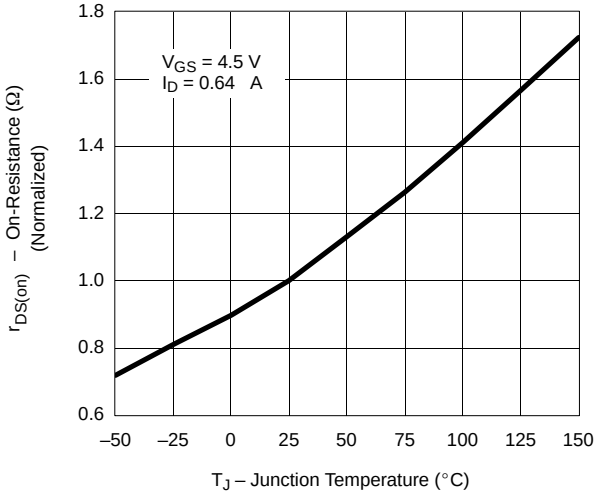
Capacitance



Gate Charge

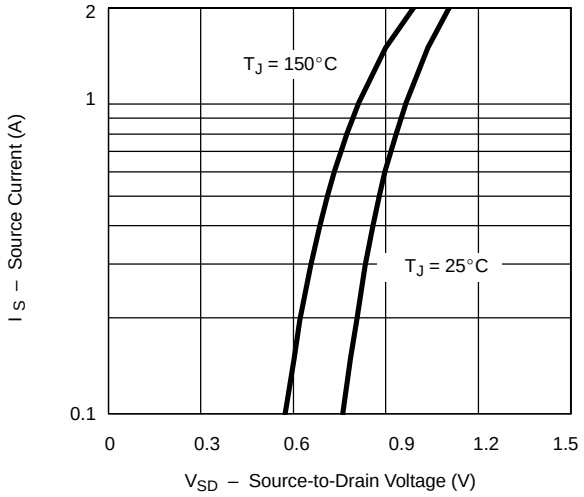


On-Resistance vs. Junction Temperature

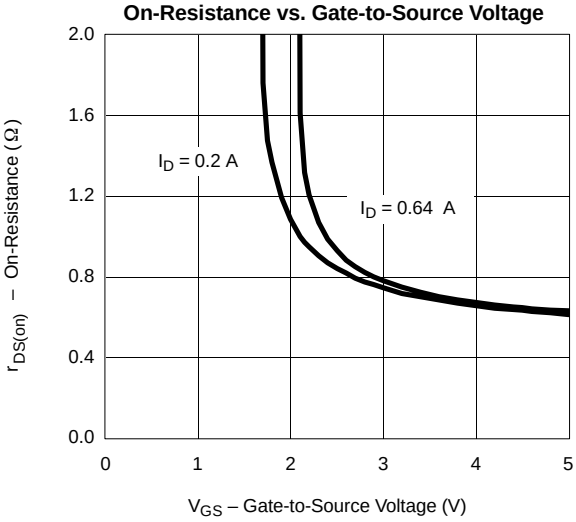


TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

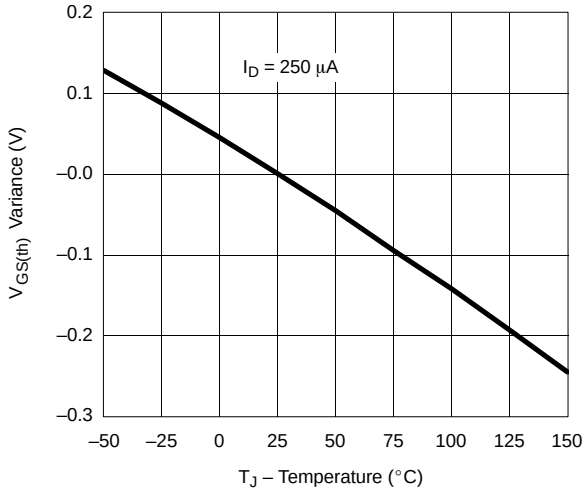
Source-Drain Diode Forward Voltage



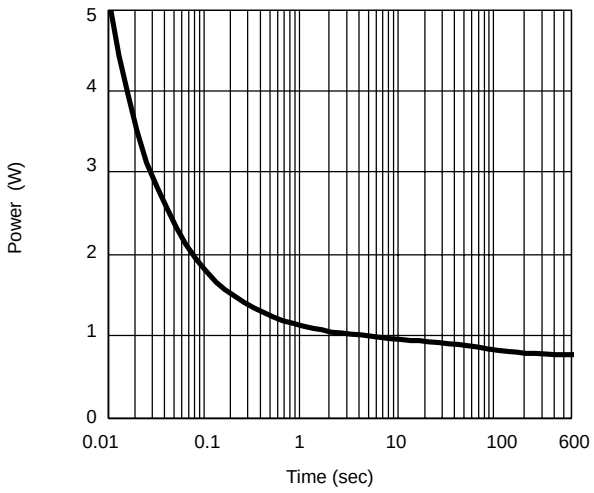
On-Resistance vs. Gate-to-Source Voltage



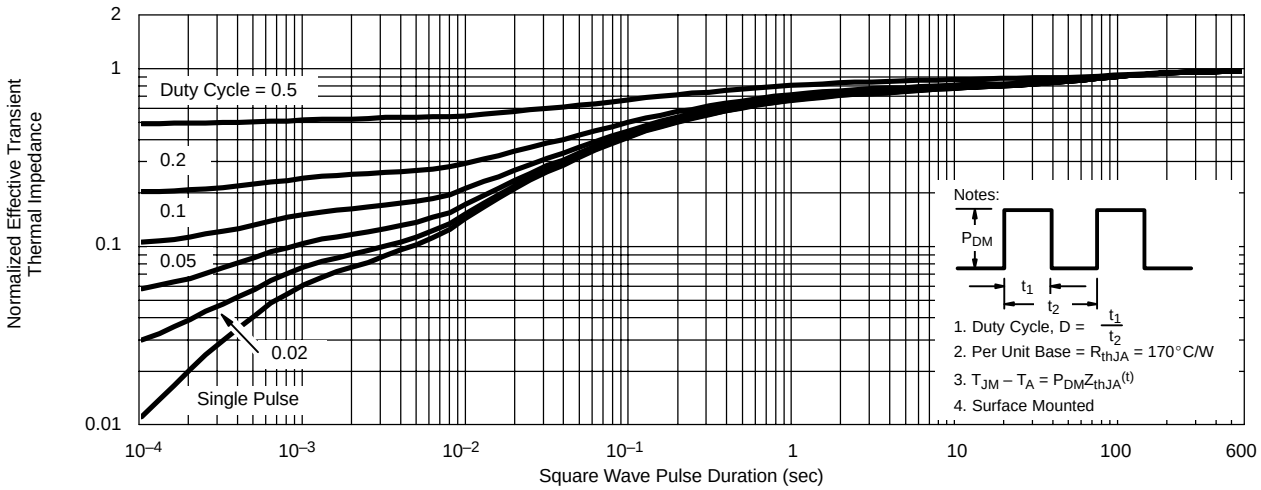
Threshold Voltage



Single Pulse Power, Junction-to-Ambient



Normalized Thermal Transient Impedance, Junction-to-Ambient



TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

Normalized Thermal Transient Impedance, Junction-to-Foot