

GENERAL FEATURES

V_{DS} (V)	Typical $R_{DS(on)}$ (m Ω)
-30	11 @ $V_{GS} = -10V$
	15 @ $V_{GS} = -5V$

Package and Pin Configuration

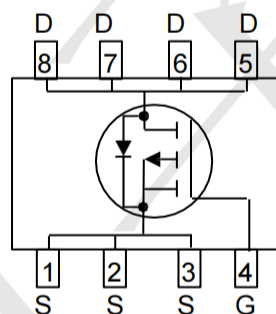


SOP-8 top view

Application

- Load/Power Switching
- Interfacing Switching
- Logic Level Shift

Circuit diagram



Absolute Maximum Ratings ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Maximum	Unit
Drain-Source Voltage	V_{DS}	-30	V
Gate-Source Voltage	V_{GS}	± 25	
Continuous Drain Current	I_D	-13	A
		-10	
Pulsed Drain Current ^c	I_{DM}	-72	
Maximum Power Dissipation ^b	P_D	3.8	W
		2.4	
Operating Junction Temperature	T_J	-55 to 150	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-55 to 150	$^\circ\text{C}$

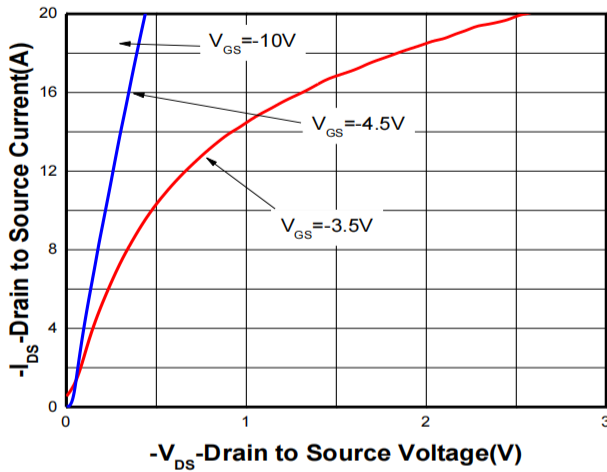
Thermal resistance ratings

Single Operation					
Parameter		Symbol	Typical	Maximum	Unit
Junction-to-Ambient Thermal Resistance ^a	$t \leq 10$ s	$R_{\theta JA}$	25	33	$^\circ\text{C/W}$
	Steady State		50	63	
Junction-to-Lead Thermal Resistance	Steady State	$R_{\theta JL}$	10	13	

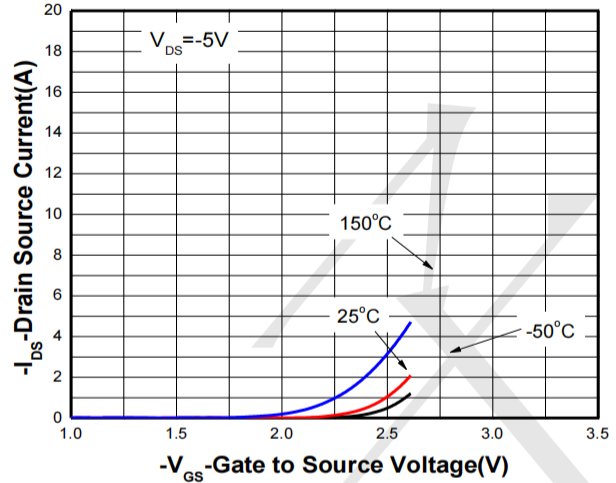
Electrical Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
OFF CHARACTERISTICS						
Drain-to-Source Breakdown Voltage	BV _{DSS}	V _{GS} = 0 V, I _D = -250uA	-30			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = -24V, V _{GS} = 0V			-1	uA
Gate-to-source Leakage Current	I _{GSS}	V _{DS} = 0 V, V _{GS} = ±25V			±100	nA
ON CHARACTERISTICS						
Gate Threshold Voltage	V _{GS(TH)}	V _{GS} = V _{DS} , I _D = -250uA	-1.0	-1.8	-3.0	V
Drain-to-source On-resistance	R _{DS(on)}	V _{GS} = -10V, I _D = -13A		11	15	mΩ
		V _{GS} = -5V, I _D = -7A		15	20	
Forward Transconductance	g _{FS}	V _{DS} = -5 V, I _D = -8A		7	16	S
CHARGES, CAPACITANCES AND GATE RESISTANCE						
Input Capacitance	C _{ISS}	V _{GS} = 0 V, f = 1.0MHz, V _{DS} = -15 V		2106		pF
Output Capacitance	C _{OSS}			353		
Reverse Transfer Capacitance	C _{RSS}			274		
Total Gate Charge	Q _{G(TOT)}	V _{GS} = -10 V, V _{DS} = -15 V, I _D = -13 A		38		nC
Threshold Gate Charge	Q _{G(TH)}			4		
Gate-to-Source Charge	Q _{GS}			7.7		
Gate-to-Drain Charge	Q _{GD}			6.5		
SWITCHING CHARACTERISTICS						
Turn-On Delay Time	td(ON)	V _{GS} = -10 V, V _{DS} = -15 V, I _D = -5A, R _G = 6Ω		18		ns
Rise Time	tr			24		
Turn-Off Delay Time	td(OFF)			114		
Fall Time	tf			47		
BODY DIODE CHARACTERISTICS						
Forward Voltage	V _{SD}	V _{GS} = 0 V, I _S = -1A	-0.5	-0.8	-1.2	V

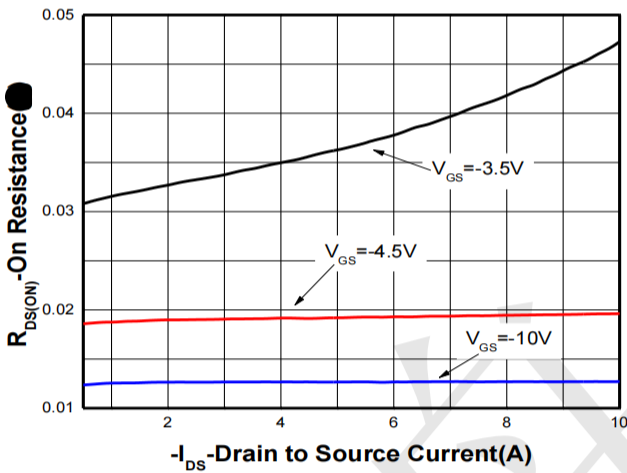
Typical Electrical and Thermal Characteristics



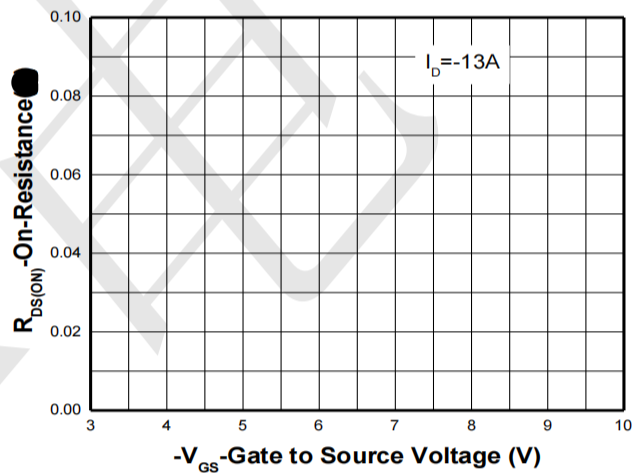
Output characteristics



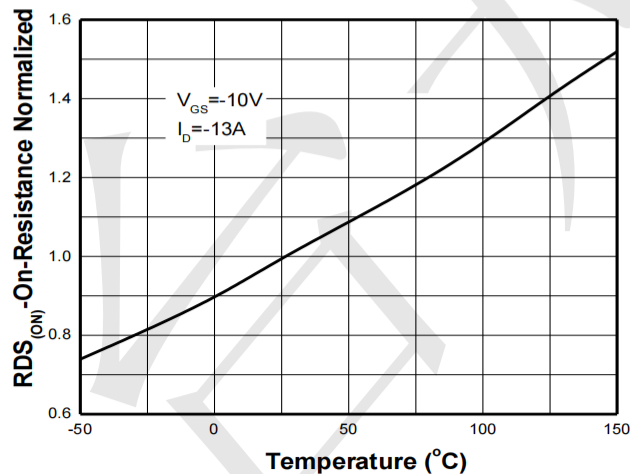
Transfer characteristics



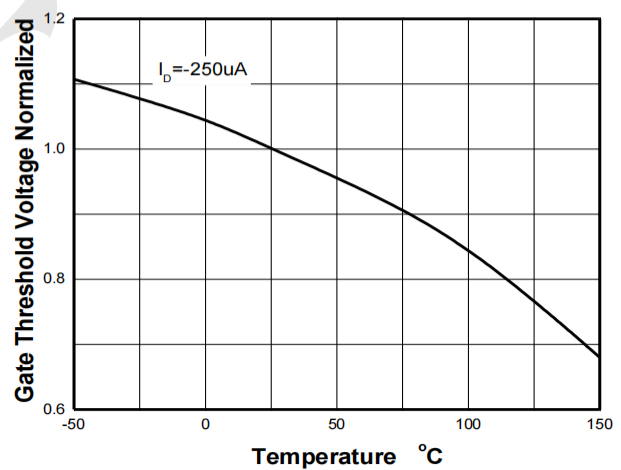
On-Resistance vs. Drain current



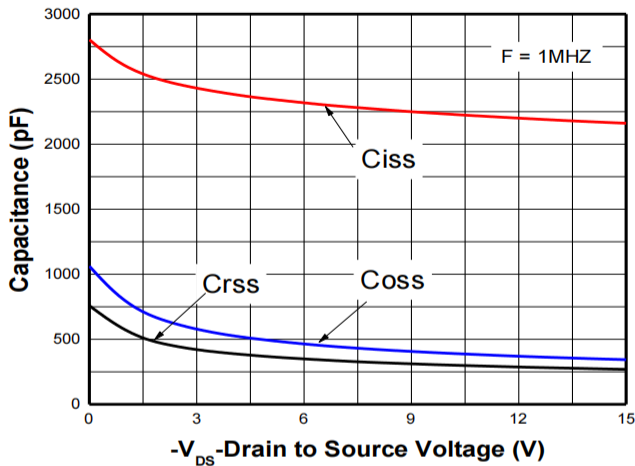
On-Resistance vs. Gate-to-source voltage



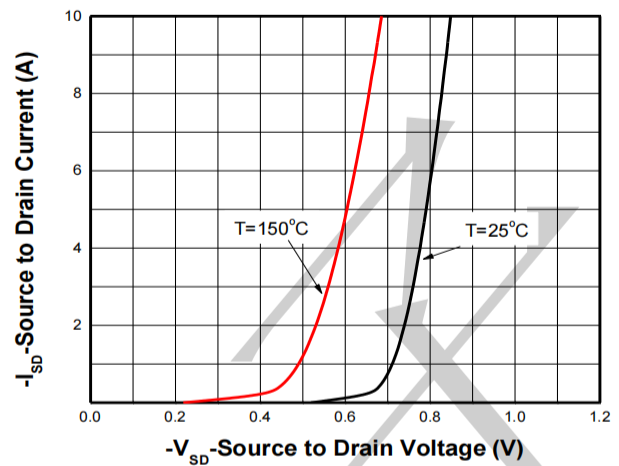
On-Resistance vs. Junction temperature



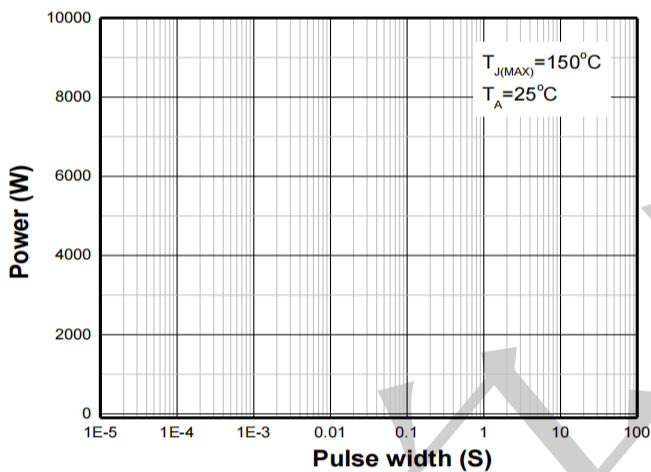
Threshold voltage vs. Temperature



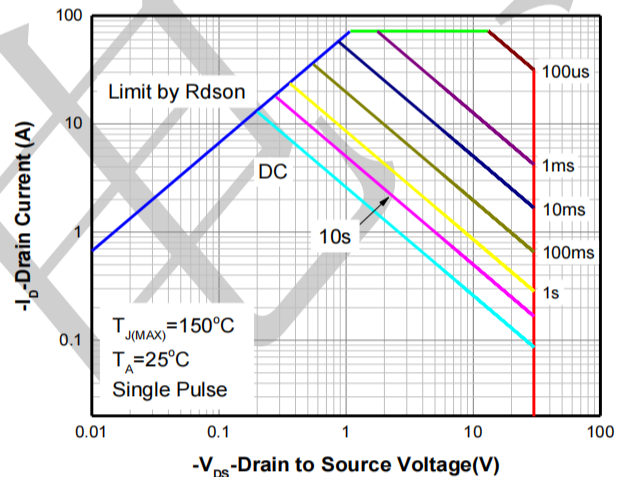
Capacitance



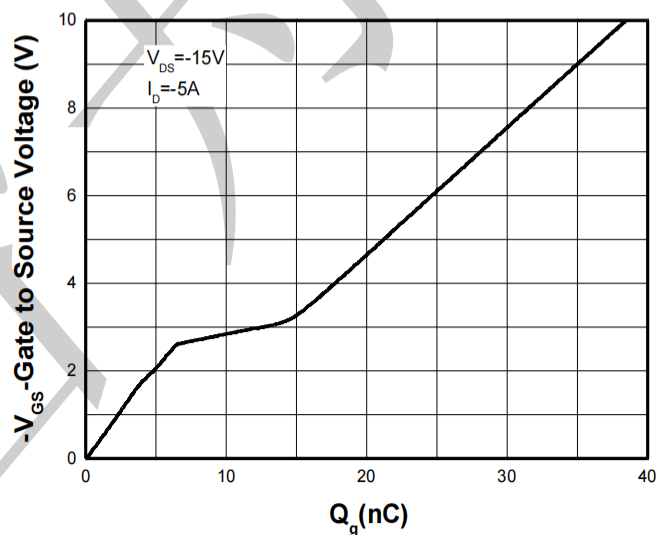
Body diode forward voltage



Single pulse power

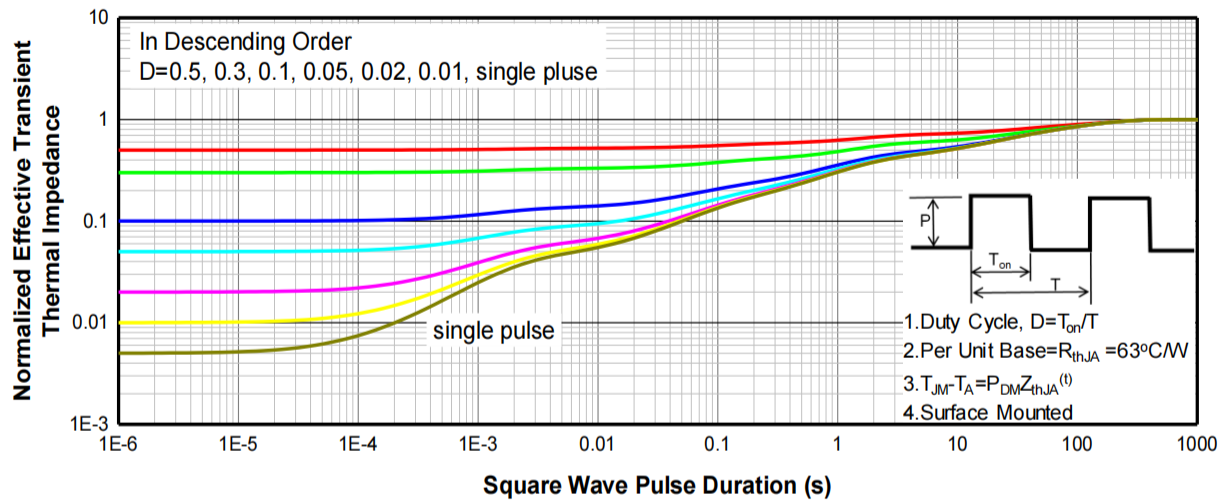


Safe operating power

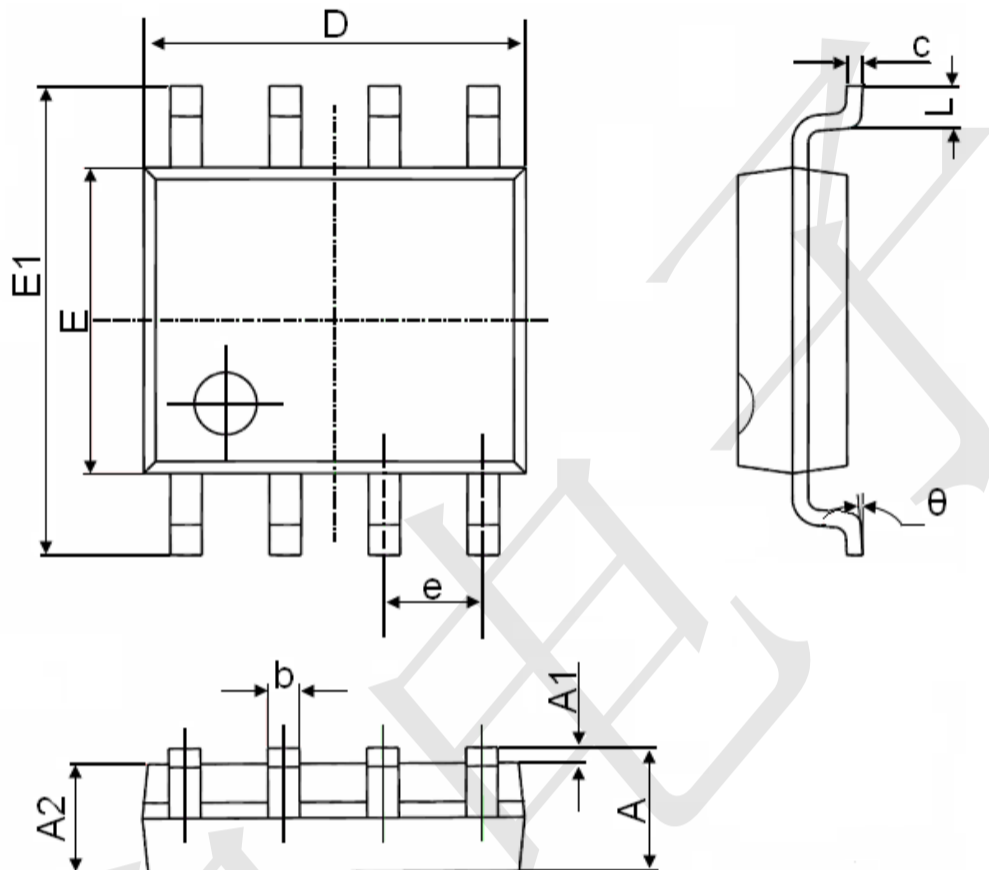


Gate Charge Characteristics

Transient Thermal Response (Junction-to-Ambient)



SOP-8 Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.350	1.750	0.053	0.069
A1	0.100	0.250	0.004	0.010
A2	1.350	1.550	0.053	0.061
b	0.330	0.510	0.013	0.020
c	0.170	0.250	0.006	0.010
D	4.700	5.100	0.185	0.200
E	3.800	4.000	0.150	0.157
E1	5.800	6.200	0.228	0.244
e	1.270(BSC)		0.050(BSC)	
L	0.400	1.270	0.016	0.050
θ	0°	8°	0°	8°