

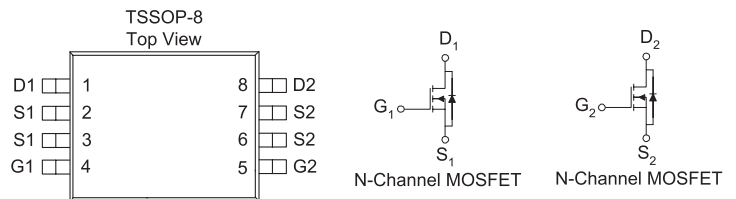
Dual N-Channel Logical Level MOSFET

These miniature surface mount MOSFETs utilize a high cell density trench process to provide low $r_{DS(on)}$ and to ensure minimal power loss and heat dissipation. Typical applications are DC-DC converters and power management in portable and battery-powered products such as computers, printers, PCMCIA cards, cellular and cordless telephones.

- Low $r_{DS(on)}$ provides higher efficiency and extends battery life
- Low thermal impedance copper leadframe TSSOP-8 saves board space
- Fast switching speed
- High performance trench technology

PRODUCT SUMMARY

V_{DS} (V)	$r_{DS(on)}$ (OHM)	I_D (A)
20	0.022 @ $V_{GS} = 4.5$ V	6.8
	0.030 @ $V_{GS} = 2.5$ V	5.8
	0.047 @ $V_{GS} = 1.8$ V	4.7



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)

Parameter		Symbol	Maximum	Units
Drain-Source Voltage		V _{DS}	20	V
Gate-Source Voltage		V _{GS}	±12	
Continuous Drain Current ^a	T _A =25°C	I _D	6.8	A
	T _A =70°C		5.4	
Pulsed Drain Current ^b		I _{DM}	±30	
Continuous Source Current (Diode Conduction) ^a		I _S	1.5	A
Power Dissipation ^a	T _A =25°C	P _D	1.5	W
	T _A =70°C		1.0	
Operating Junction and Storage Temperature Range		T _J , T _{stg}	-55 to 150	°C

THERMAL RESISTANCE RATINGS

Parameter	Symbol	Typ	Max	
Maximum Junction-to-Ambient ^a	$t \leq 10$ sec	R_{thJA}	72	$^\circ\text{C/W}$
	Steady State		100	

Notes

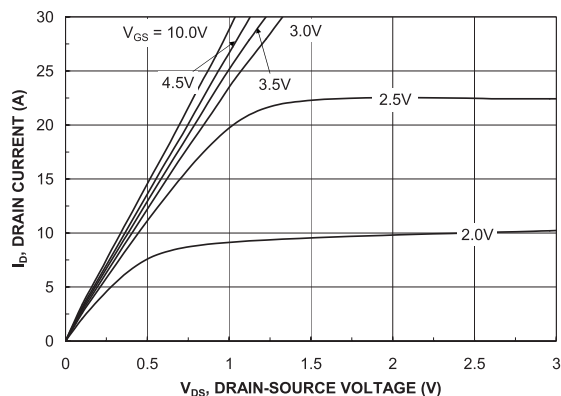
- Surface Mounted on 1" x 1" FR4 Board.
- Pulse width limited by maximum junction temperature

SPECIFICATIONS (T _A = 25°C UNLESS OTHERWISE NOTED)						
Parameter	Symbol	Test Conditions				Unit
			Min	Typ	Max	
Static						
Gate-Threshold Voltage	V _{GS(th)}	V _{GS} = V _{DS} , I _D = 250 uA	0.7			V
Gate-Body Leakage	I _{GSS}	V _{DS} = 0 V, V _{GS} = ± 12 V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 16 V, V _{GS} = 0 V			1	uA
		V _{DS} = 16 V, V _{GS} = 0 V, T _J = 55°C			10	uA
On-State Drain Current ^A	I _{D(on)}	V _{DS} = 5 V, V _{GS} = 4.5 V	30			A
Drain-Source On-Resistance ^A	r _{DS(on)}	V _{GS} = 4.5 V, I _D = 6.8 A			0.022	Ω
		V _{GS} = 2.5 V, I _D = 5.8 A			0.030	
		V _{GS} = 1.8 V, I _D = 4.7 A			0.047	
Forward Tranconductance ^A	g _{fs}	V _{DS} = 10 V, I _D = 6.8 A		25		S
Diode Forward Voltage ^A	V _{SD}	I _S = 6.8 A, V _{GS} = 0 V		0.89		V
Dynamic ^b						
Total Gate Charge	Q _g	V _{DS} =10V, V _{GS} =4.5V, I _D =6.8A		13.4		nC
Gate-Source Charge	Q _{gs}			0.9		
Gate-Drain Charge	Q _{gd}			2.0		
Turn-On Delay Time	td(on)	V _{DD} =10V, V _{GS} =4.5V, I _D =1A , R _{GEN} =10Ω		18		nS
Rise Time	tr			25		
Turn-Off Delay Time	td(off)			50		
Fall-Time	tf			25		

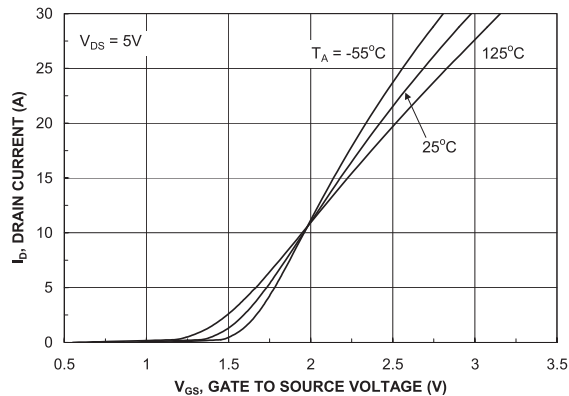
Notes

- Pulse test: PW ≤ 300us duty cycle ≤ 2%.
- Guaranteed by design, not subject to production testing.

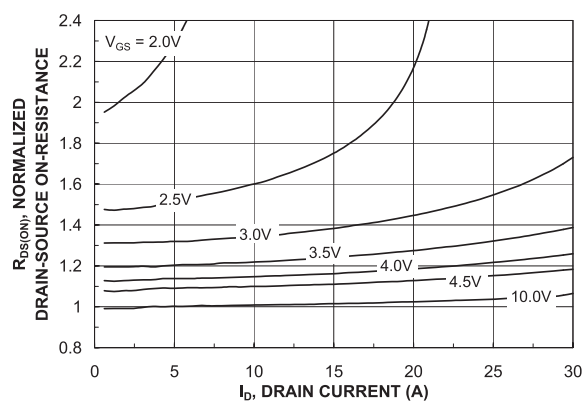
Typical Electrical Characteristics (N-Channel)



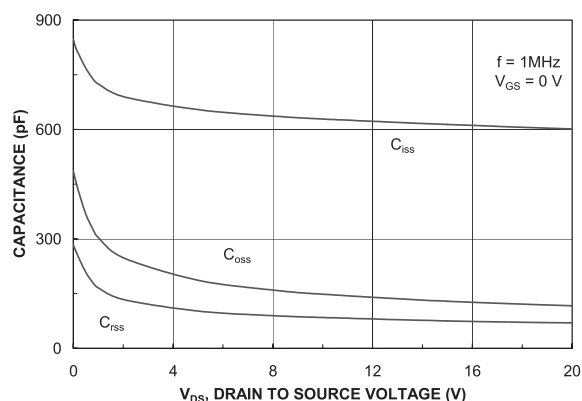
Output Characteristics



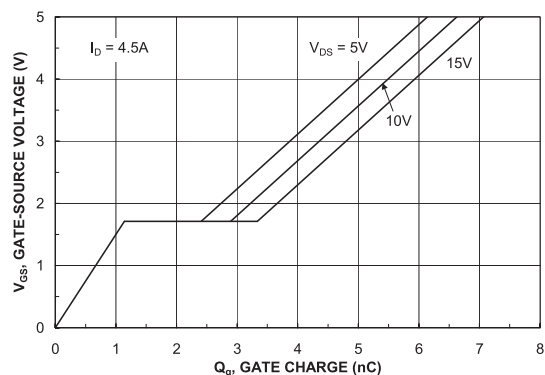
Transfer Characteristics



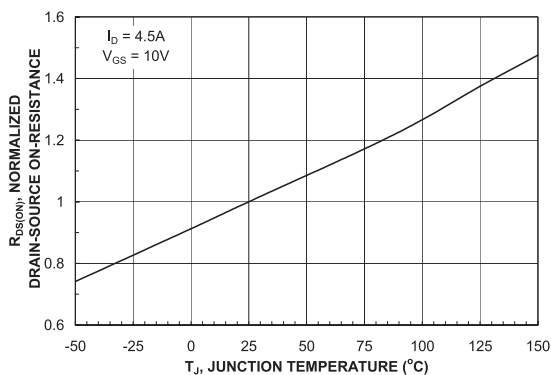
On-Resistance vs. Drain Current



Capacitance

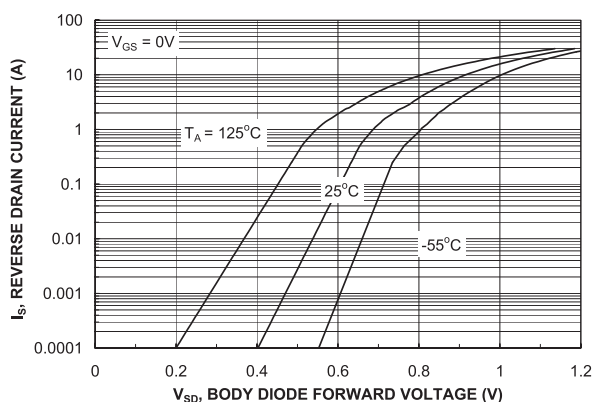


Gate Charge

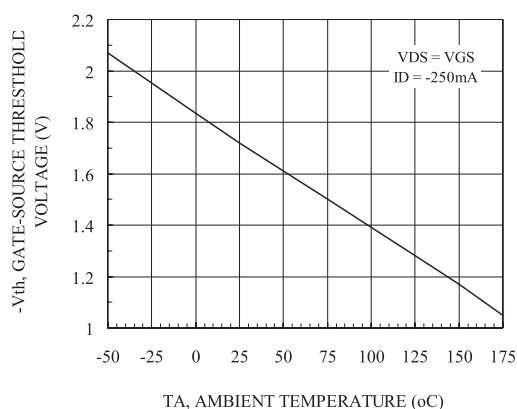


On-Resistance vs. Junction Temperature

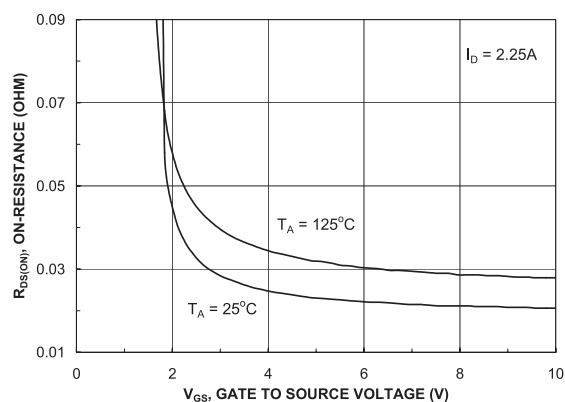
Typical Electrical Characteristics (N-Channel)



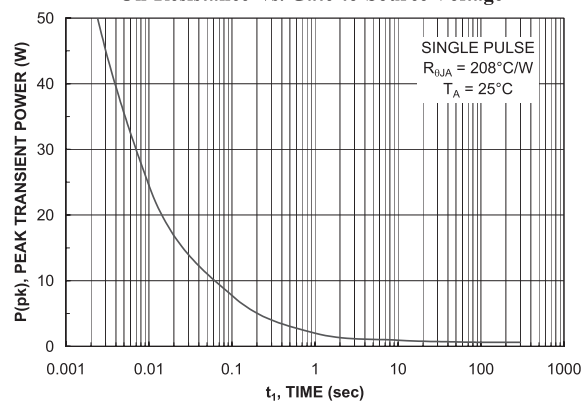
Source-Drain Diode Forward Voltage



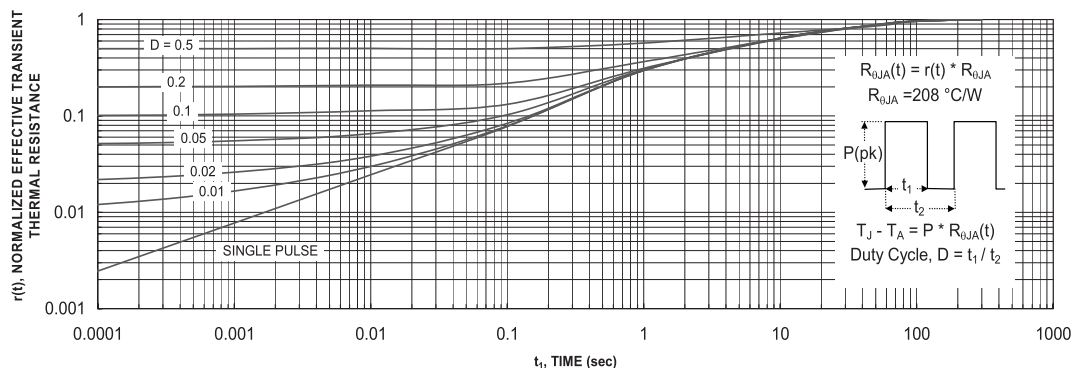
V_{th} Gate to Source Voltage Vs Temperature



On-Resistance vs. Gate-to-Source Voltage



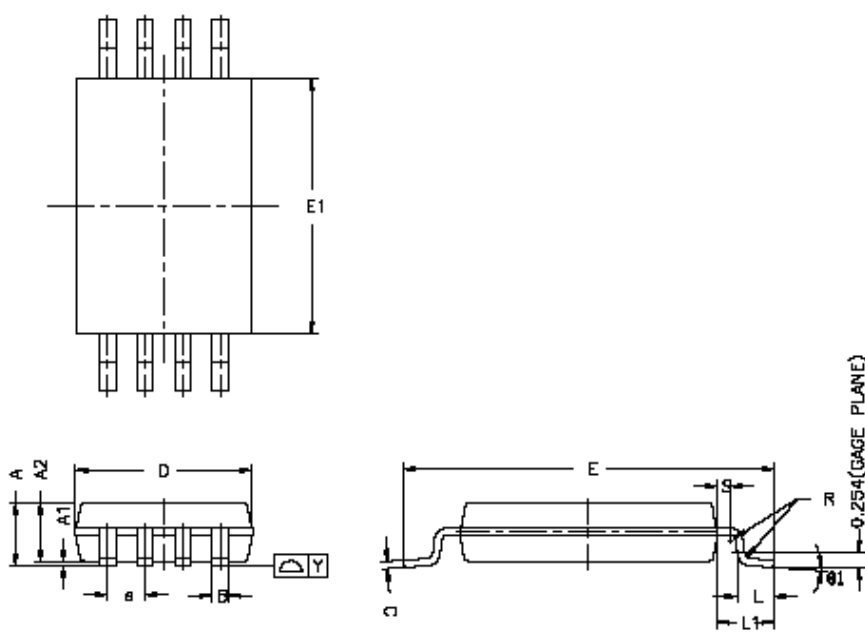
Single Pulse Power, Junction-to-Ambient



Normalized Thermal Transient Junction to Ambient

Package Information

TSSOP-8: 8LEAD



DIM.	MILLIMETERS		
	MIN.	NDM.	MAX.
A	1.05	1.10	1.20
A(1)	0.05	0.10	0.15
A(2)	0.99	1.02	1.05
B	0.19	0.25	0.30
C	---	0.127	---
D	2.90	3.00	3.10
E	6.20	6.40	6.60
E1	4.30	4.40	4.50
a	0.65±0.05		
L	0.45	0.60	0.75
L1	0.90	1.00	1.10
Y	---	---	0.10
Ø1	Ø	Ø	Ø
R	0.09	---	---
S	0.20	---	---