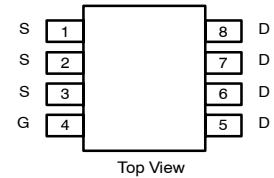


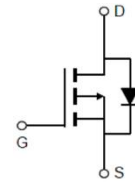
Features

- -30V, $R_{DS(ON)}=13.5m\Omega(Typ)$, $V_{GS}=-10V$
 $R_{DS(ON)}=18.5m\Omega(Typ)$, $V_{GS}=-4.5V$
- Fast Switching
- High density cell design for low $R_{DS(on)}$
- Material: Halogen free
- Reliable and rugged
- Avalanche Rated
- Low leakage current



SOP-8

Circuit Diagram



Applications

- PWM applications
- Load switch
- Power management in portable/desktop PCs
- DC/DC conversion

Absolute Maximum Ratings (Tamb=25°C unless otherwise specified)

Parameter		Symbol	Limit	Unit
Drain-Source Voltage		BV_{DSS}	-30	V
Gate-Source Voltage		V_{GS}	± 25	V
Continuous Drain Current	$T_A=25^\circ C$	I_D	-10.5	A
	$T_A=70^\circ C$		-8.0	
Maximum Power Dissipation	$T_A=25^\circ C$	P_D	3.1	W
	$T_A=70^\circ C$		2.0	
Pulsed Drain Current		I_{DM}	-80	A
Avalanche Current, Single Pulsed ^a		I_{AS}	-20	A
Avalanche Energy, Single Pulsed ^a		E_{AS}	60	mJ
Operating Junction Temperature		T_J	150	°C
Storage Temperature Range		T_{stg}	-55 to +150	°C

Electrical Characteristics (TA=25°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
OFF CHARACTERISTICS						
Drain-to-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V, I _D =-250uA	-30			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{GS} =0V, V _{DS} =-30V			-1	uA
Gate-to-source Leakage Current	I _{GSS}	V _{GS} =±25V, V _{DS} =0V			±100	nA
ON CHARACTERISTICS						
Gate Threshold Voltage	V _{GS(TH)}	V _{GS} =V _{DS} , I _D =-250uA	-1.0	-1.5	-2.0	V
Drain-to-source On-resistance	R _{DS(on)}	V _{GS} =-10V, I _D =-10A		13.5	21	mΩ
		V _{GS} =-4.5V, I _D =-7A		18.5	27	
CHARGES, CAPACITANCES AND GATE RESISTANCE						
Input Capacitance	C _{ISS}	V _{GS} =0V V _{DS} =-15V f=1MHz		1230		pF
Output Capacitance	C _{OSS}			160		
Reverse Transfer Capacitance	C _{RSS}			145		
Gate Resistance	R _g	f=1MHZ		10		Ω
Total Gate Charge	Q _{G(TOT)}	V _{GS} =-10V V _{DS} =-15V I _D =-10A		26.4		nC
Gate-to-Source Charge	Q _{GS}			6		
Gate-to-Drain Charge	Q _{GD}			4.3		
SWITCHING CHARACTERISTICS						
Turn-On Delay Time	t _{d(ON)}	V _{GS} =-10V V _{DS} =-15V R _L =1Ω R _G =3Ω		18		ns
Rise Time	t _r			22		
Turn-Off Delay Time	t _{d(OFF)}			55		
Fall Time	t _f			42		
BODY DIODE CHARACTERISTICS						
Forward Voltage	V _{SD}	V _{GS} =0V, I _{SD} =-1.0A		-0.75	-1	V
Reverse Recovery Time	t _{rr}	V _{GS} =0V, I _{SD} =-10A, di/dt=100A/us		32		ns
Reverse Recovery Charge	Q _{rr}			28		nC

Typical Performance Characteristics ($T_A=25^\circ\text{C}$ unless otherwise Specified)

Figure 1. On-Regin Characteristics

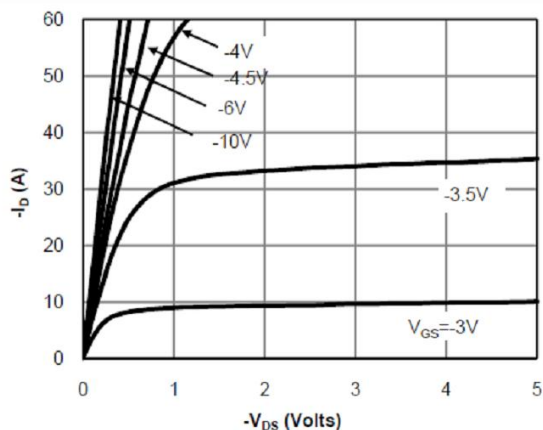


Figure 2. Transfer Characteristics

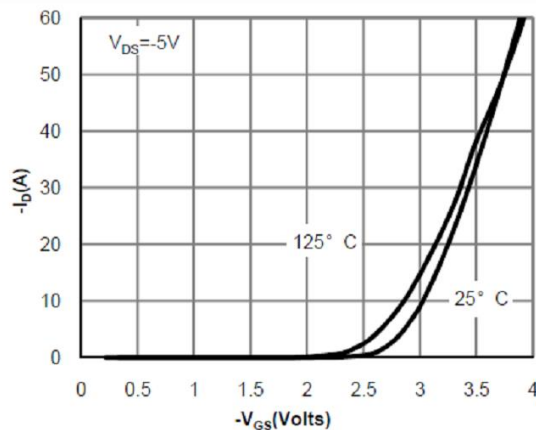


Figure 3. On-Resistance vs. Drain Current and Gate Voltage

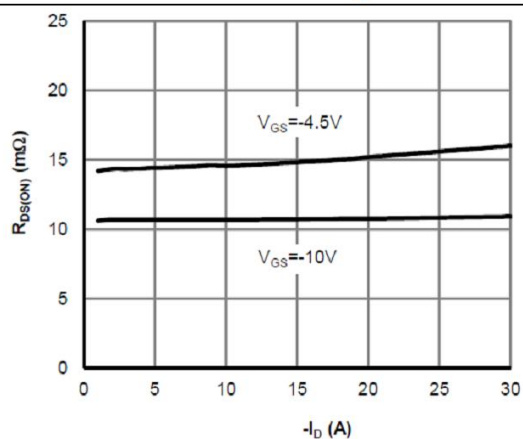


Figure 4. On-Resistance vs. Junction Temperature

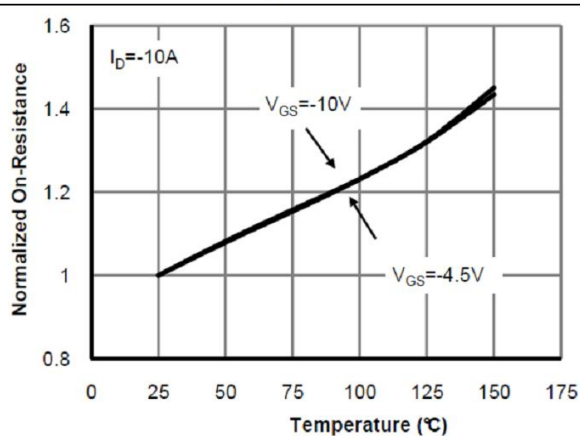


Figure 5. On-Resistance vs. Gate-Source Voltage

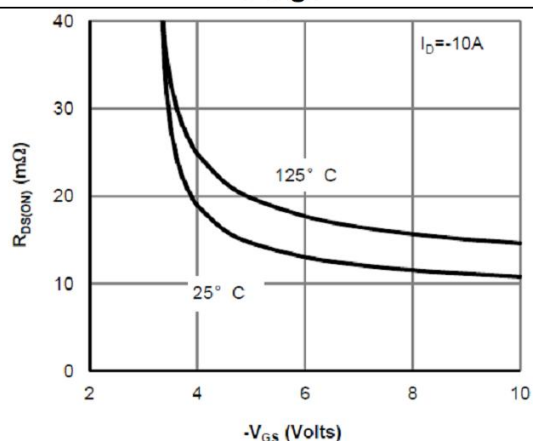


Figure 6. Body-Diode Characteristics

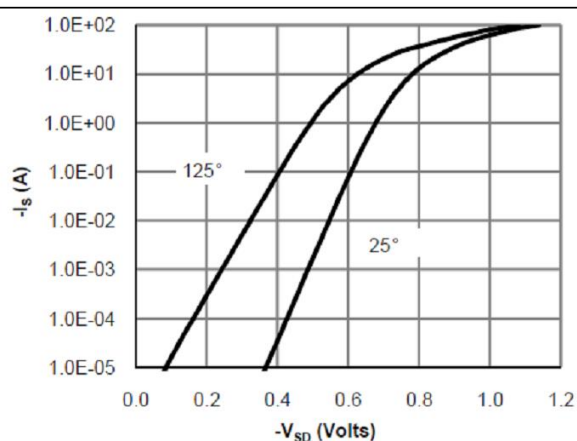


Figure 7. Gate-Charge Characteristics

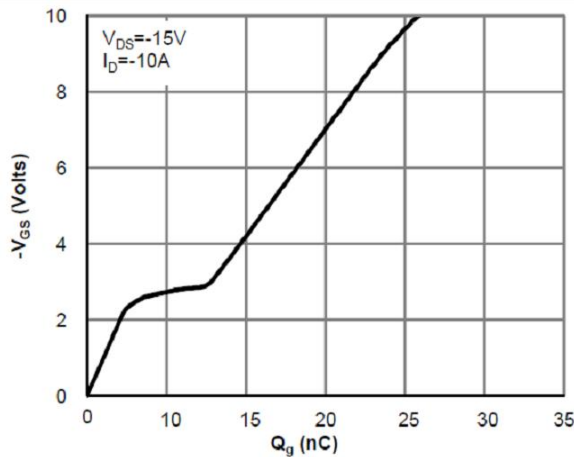


Figure 8. Capacitance Characteristics

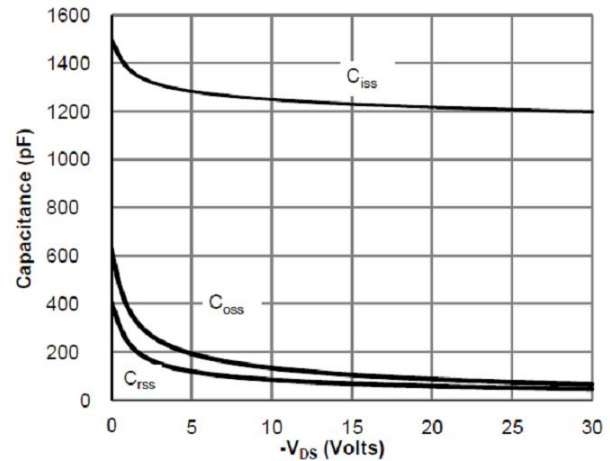


Figure 9. Maximum Forward Biased Safe Operating Area

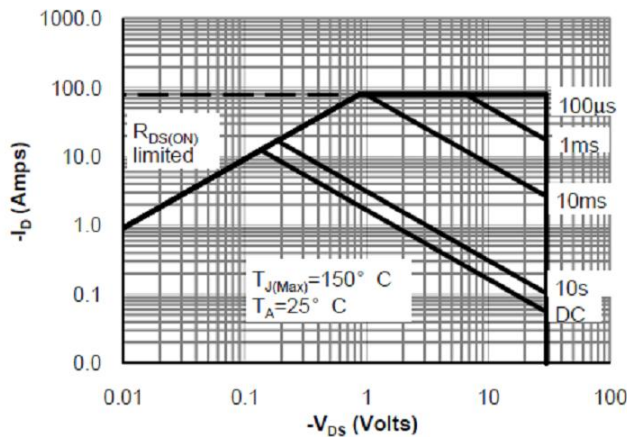


Figure 10. Single Pulse Power Rating Junction-to-Ambient

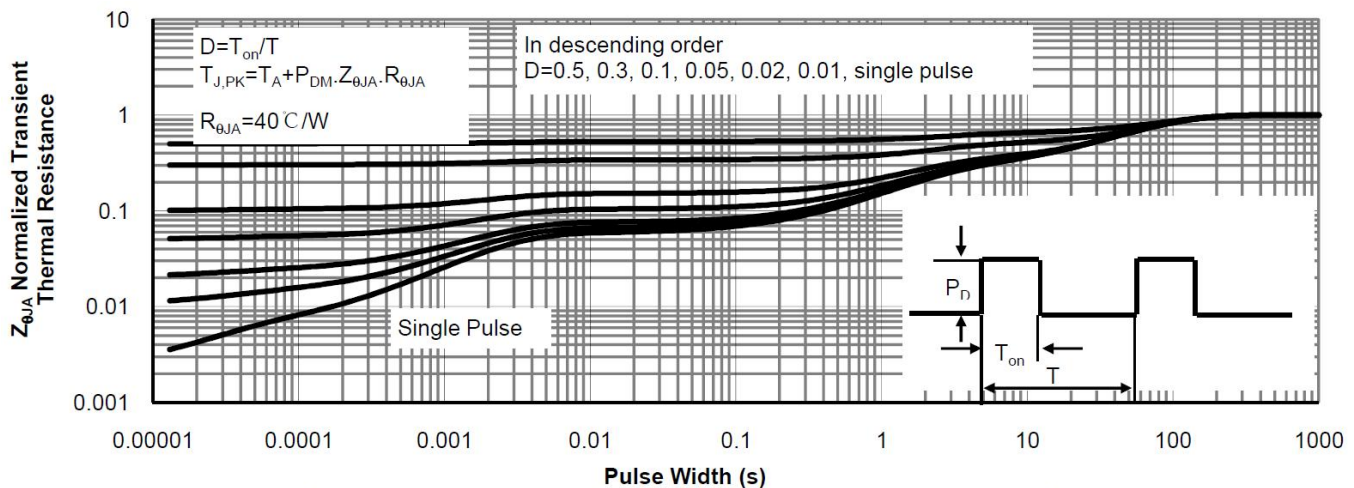
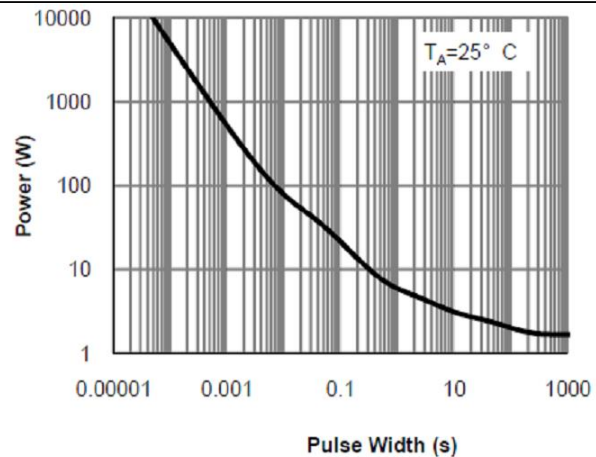
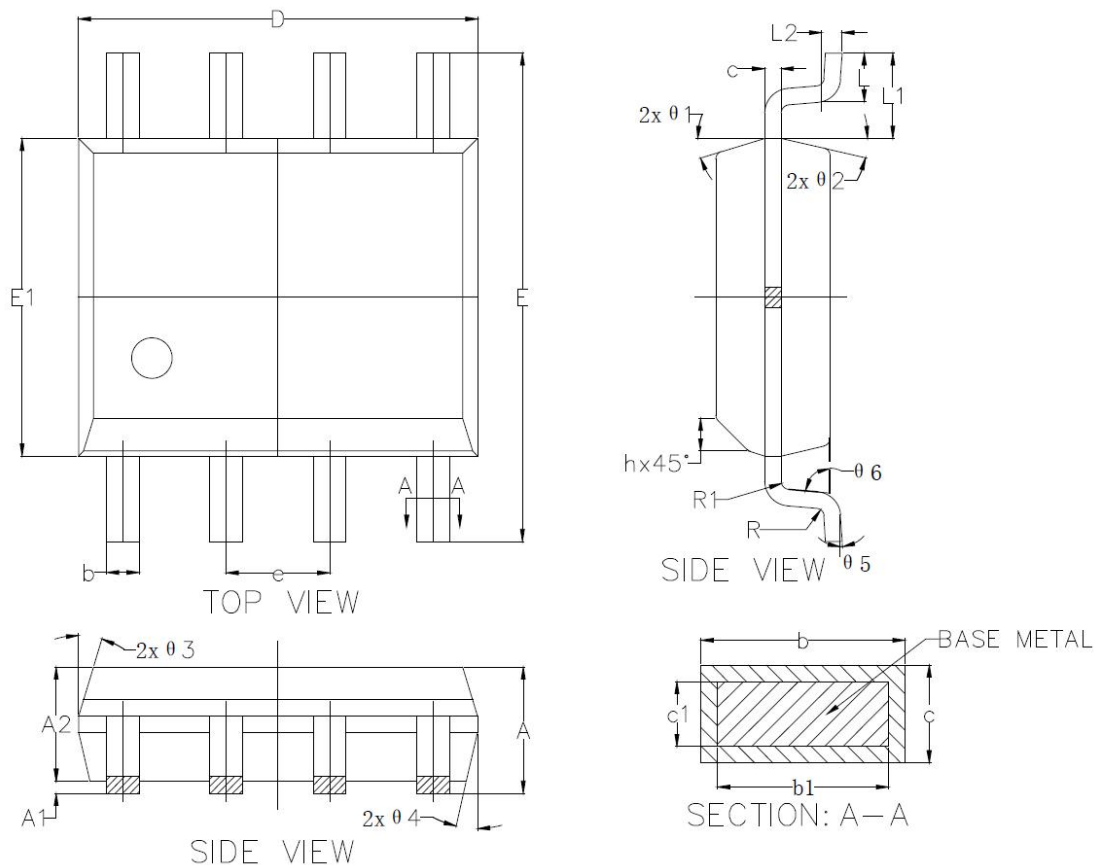


Figure 11: Normalized Maximum Transient Thermal Impedance (Note F)

Dimension and Patterns (SOP8)



COMMON DIMENSIONS: UNITS OF MEASURE=MILLIMETER

Symbol	Dimensions			Symbol	Dimensions		
	Min.	Typ.	Max.		Min.	Typ.	Max.
A	1.40	1.55	1.70	L1	0.96	1.06	1.16
A1	0.05		0.25	L2	0.25 BSC		
A2	1.30	1.40	1.50	R	0.07		
b	0.37		0.47	R1	0.07		
b1	0.35		0.45	h	0.25	0.35	0.45
c	0.17		0.27	θ 1	15°	17°	19°
c1	0.15		0.25	θ 2	11°	13°	15°
D	4.80	4.90	5.00	θ 3	15°	17°	19°
E	5.85		6.15	θ 4	11°	13°	15°
E1	3.80	3.90	4.00	θ 5	0°	3°	6°
e	1.27 BSC			θ 6	55°		85°
L	0.57		0.87	Φ	0.40	0.50	0.60