

Description

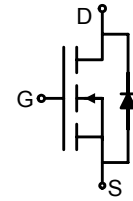
The SSF3606 uses advanced trench technology to provide excellent $R_{DS(ON)}$ and low gate charge. This device is suitable for use as a load switch or in PWM applications.

Features

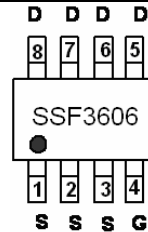
- $V_{DS} = 30V, I_D = 15A$
 $R_{DS(ON)} < 8.5m\Omega @ V_{GS}=4.5V$
 $R_{DS(ON)} < 6m\Omega @ V_{GS}=10V$
- High Power and Current Handling Capability
- Lead Free
- Surface Mount Package

Applications

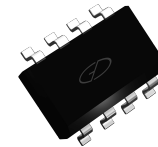
- PWM Applications
- Load Switch
- Power Management



Schematic Diagram



Marking and Pin Assignment



SOP-8 Top View

Package Marking and Ordering Info

Device Marking	Device	Device Package	Reel Size	Tape Width	Quantity
SSF3606	SSF3606	SOP-8	Ø330mm	12mm	2500 units

Absolute Maximum Ratings ($T_A=25^\circ C$ unless otherwise specified)

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	± 20	V
Drain Current-Continuous@ Current-Pulsed (Note 1)	$I_D(25^\circ C)$	15	A
	$I_D(70^\circ C)$	12.5	A
	I_{DM}	60	A
Maximum Power Dissipation	P_D	2	W
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55 To 150	$^\circ C$

Thermal Characteristics

Thermal Resistance, Junction-to-Ambient (Note 2)	$R_{\theta JA}$	62.5	$^\circ C/W$
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Test Circuits and Waveforms

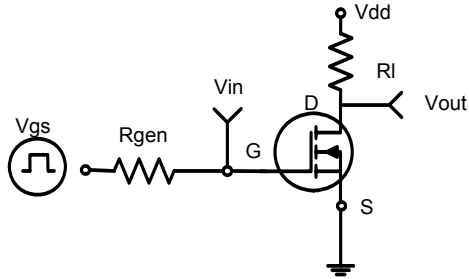


Figure 1. Switching Test Circuit

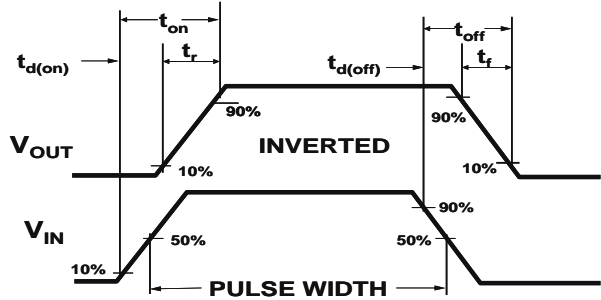


Figure 2. Switching Waveforms

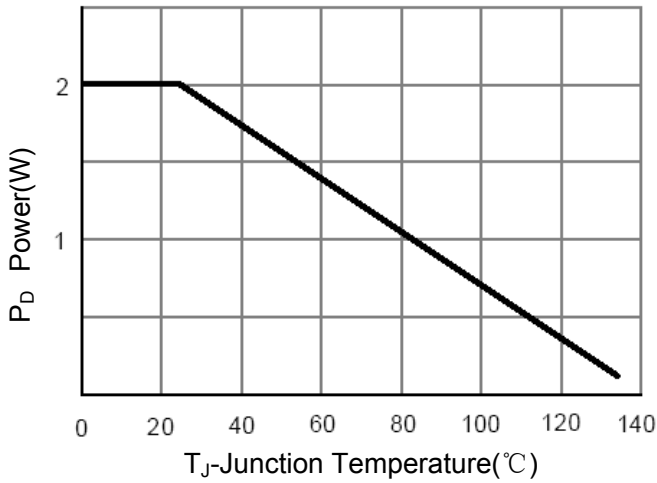


Figure 3. Power Dissipation

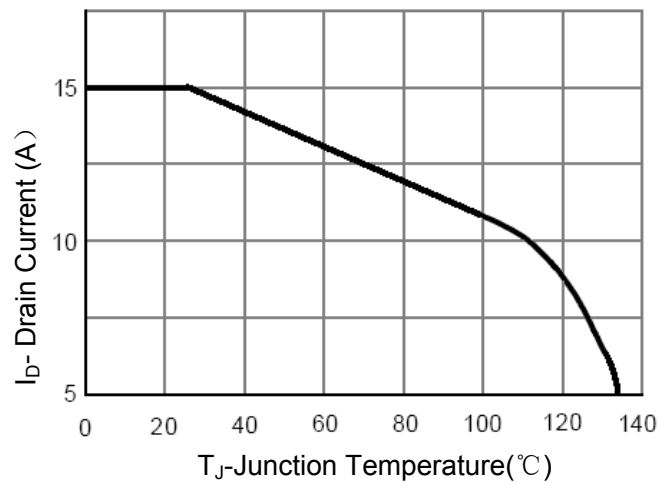


Figure 4. Drain Current

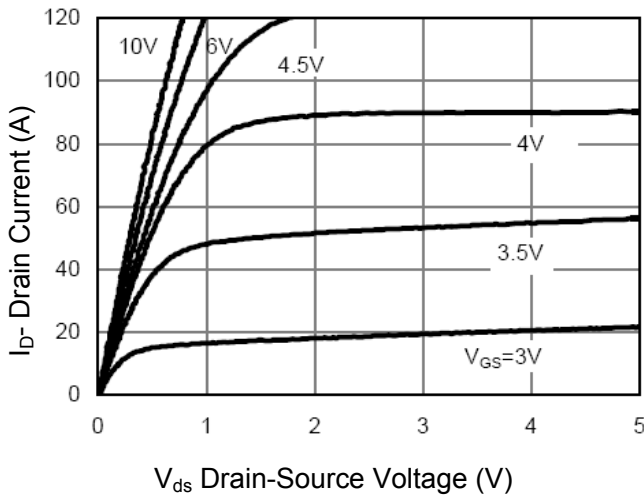


Figure 5. Output Characteristics

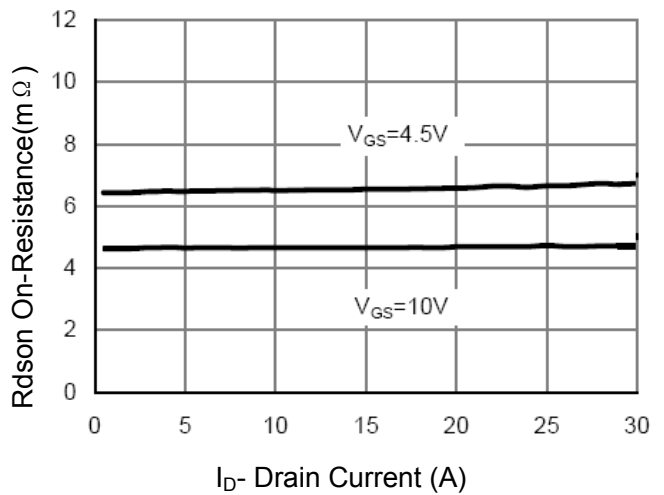


Figure 6. Drain-Source On-Resistance

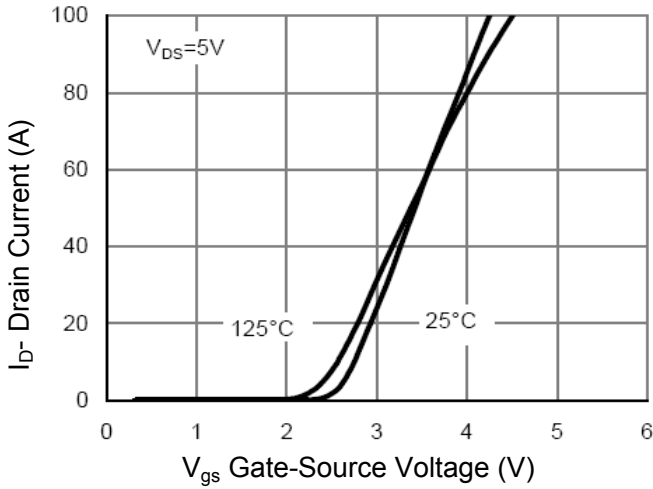


Figure 7. Transfer Characteristics

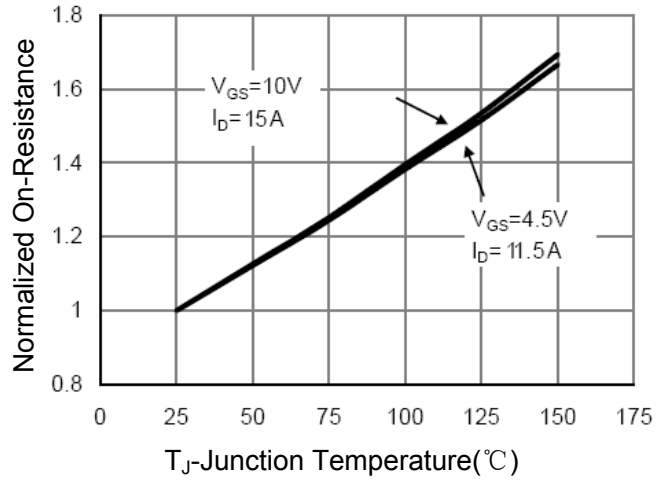


Figure 8. Drain-Source On-Resistance

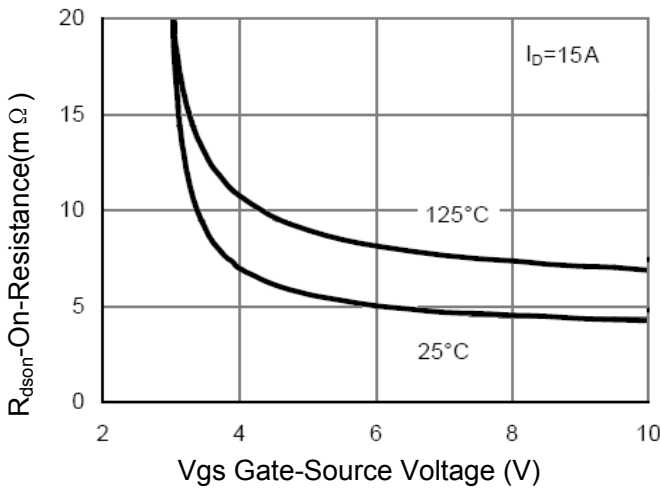


Figure 9. $R_{ds(on)}$ vs V_{GS}

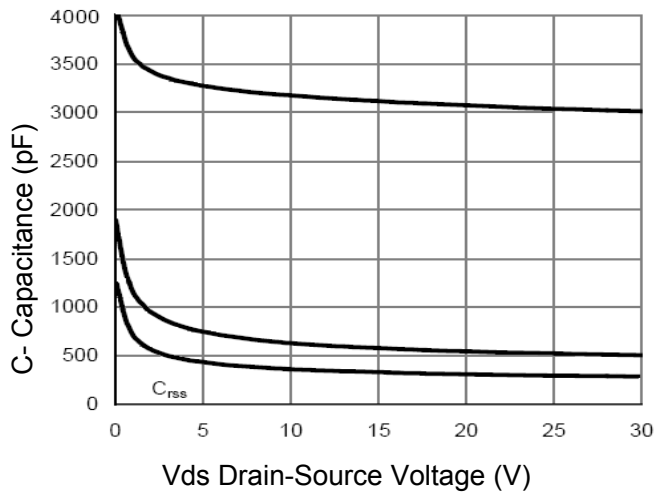


Figure 10. Capacitance vs V_{DS}

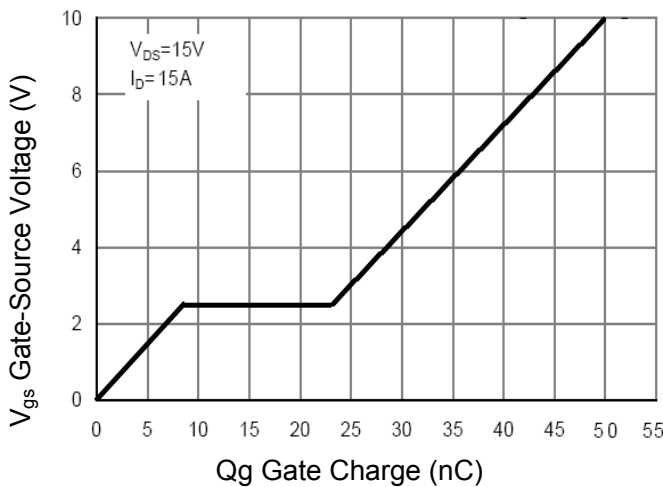


Figure 11. Gate Charge

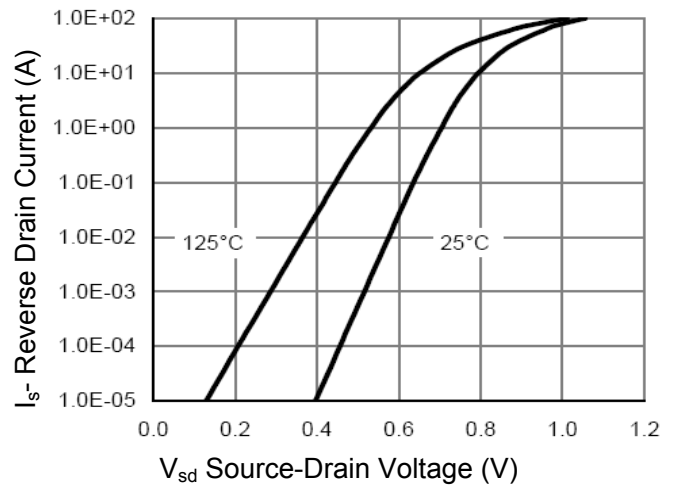


Figure 12. Source- Drain Diode Forward

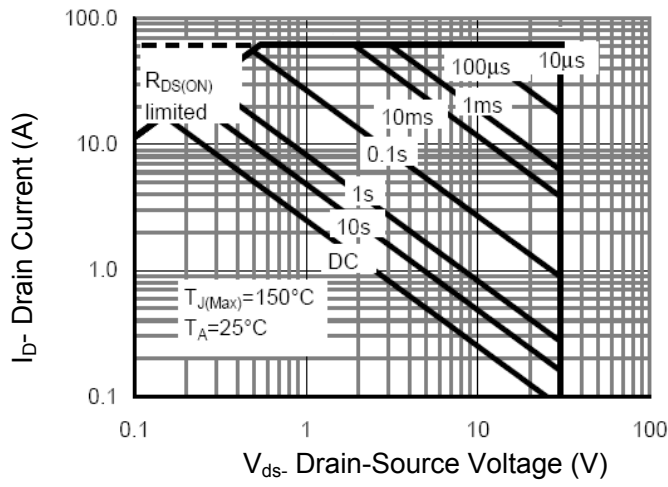


Figure 13. Safe Operation Area

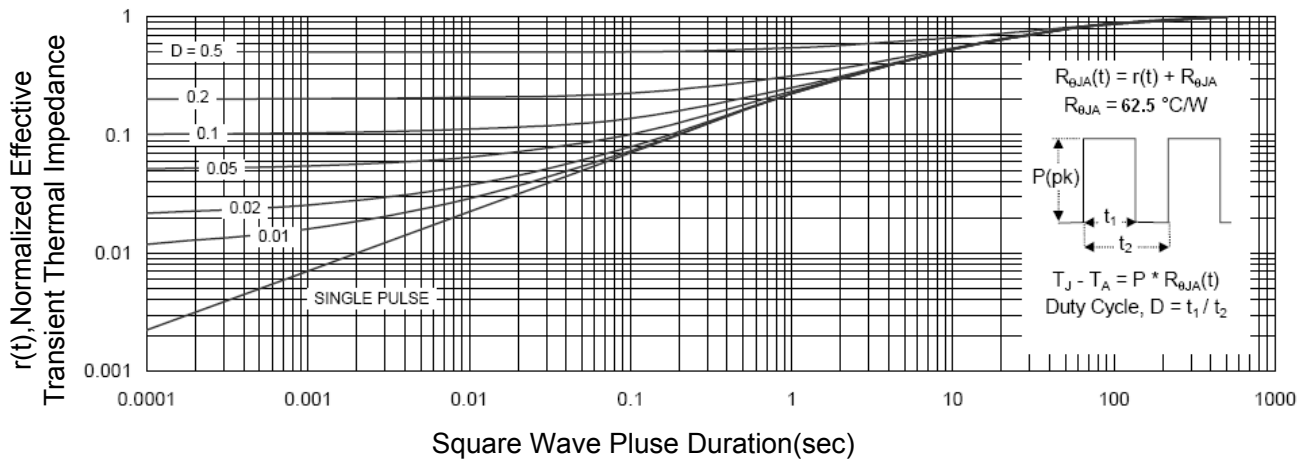
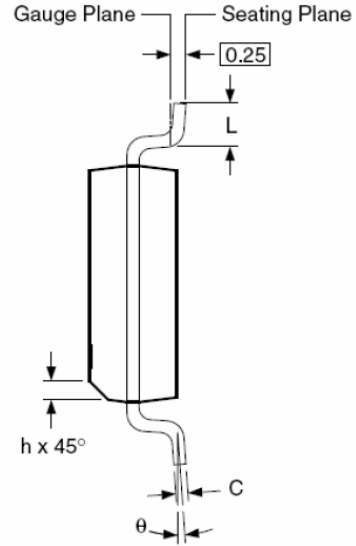
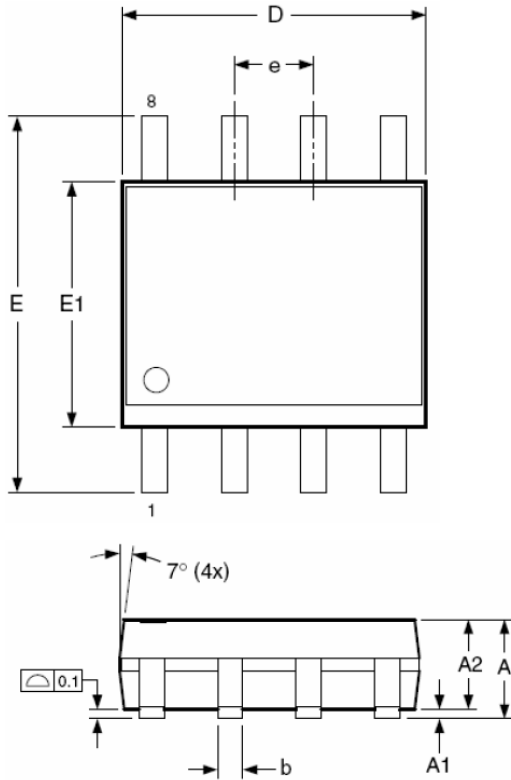


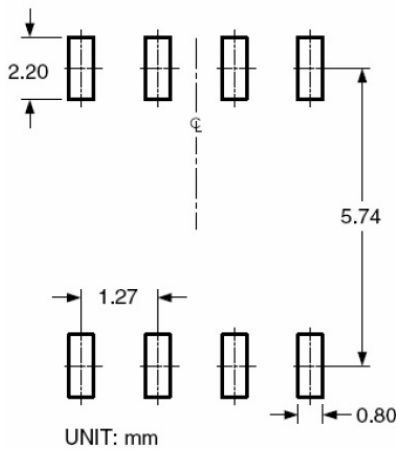
Figure 14. Normalized Maximum Transient Thermal Impedance

Package Outline Dimensions

SOP-8



RECOMMENDED LAND PATTERN



Dimensions in millimeters

Symbols	Min.	Nom.	Max.
A	1.35	1.65	1.75
A1	0.10	—	0.25
A2	1.25	1.50	1.65
b	0.31	—	0.51
c	0.17	—	0.25
D	4.80	4.90	5.00
E1	3.80	3.90	4.00
e	1.27 BSC		
E	5.80	6.00	6.20
h	0.25	—	0.50
L	0.40	—	1.27
θ	0°	—	8°

Dimensions in inches

Symbols	Min.	Nom.	Max.
A	0.053	0.065	0.069
A1	0.004	—	0.010
A2	0.049	0.059	0.065
b	0.012	—	0.020
c	0.007	—	0.010
D	0.189	0.193	0.197
E1	0.150	0.154	0.157
e	0.050 BSC		
E	0.228	0.236	0.244
h	0.010	—	0.020
L	0.016	—	0.050
θ	0°	—	8°

NOTES:

1. Dimensions are inclusive of plating
2. Package body sizes exclude mold flash and gate burrs. Mold flash at the non-lead sides should be less than 6 mils.
3. Dimension L is measured in gauge plane.
4. Controlling dimension is millimeter, converted inch dimensions are not necessarily exact.