



## General Description

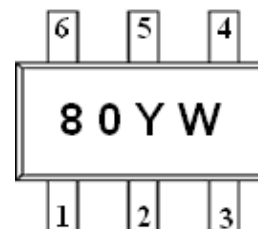
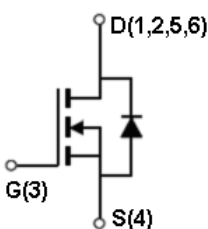
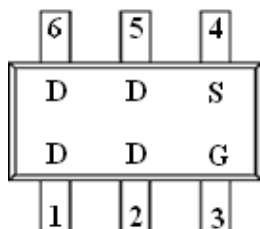
AFN1480, N-Channel enhancement mode MOSFET, uses Advanced Trench Technology to provide excellent  $R_{DS(ON)}$ , low gate charge.

These devices are particularly suited for low voltage power management, such as smart phone and notebook computer and other battery powered circuits, and low in-line power loss are needed in commercial industrial surface mount applications.

## Features

- 100V/2.3A,  $R_{DS(ON)}=285m\Omega@V_{GS}=10V$
- 100V/1.8A,  $R_{DS(ON)}=295m\Omega@V_{GS}=4.5V$
- Super high density cell design for extremely low  $R_{DS(ON)}$
- Exceptional on-resistance and maximum DC current capability
- SOT-363 package design

## Pin Description ( SOT-363 )



## Application

- Load Switches
- DC/DC Converters
- Power Management
- LED Backlighting

## Pin Define

Pin	Symbol	Description
1	D	Drain
2	D	Drain
3	G	Gate
4	S	Source
5	D	Drain
6	D	Drain

## Ordering Information

Part Ordering No.	Part Marking	Package	Unit	Quantity
AFN1480S36RG	80YW	SOT-363	Tape & Reel	3000 EA

- ※ 80 parts code
- ※ Y year code ( 0 ~ 9 )
- ※ W week code ( A ~ Z = 1 ~ 26 / a ~ z = 27 ~ 52 )
- ※ AFN1480S36RG : 7" Tape & Reel ; Pb- Free ; Halogen- Free



### Absolute Maximum Ratings

(T<sub>A</sub>=25°C Unless otherwise noted)

Parameter	Symbol	Typical	Unit
Drain-Source Voltage	V <sub>DSS</sub>	100	V
Gate –Source Voltage	V <sub>GSS</sub>	±20	V
Continuous Drain Current(T <sub>J</sub> =150°C)	I <sub>D</sub>	T <sub>A</sub> =25°C	2.3
		T <sub>A</sub> =70°C	1.8
Pulsed Drain Current	I <sub>DM</sub>	7	A
Continuous Source Current(Diode Conduction)	I <sub>S</sub>	1.3	A
Power Dissipation	P <sub>D</sub>	T <sub>A</sub> =25°C	1.5
		T <sub>A</sub> =70°C	1.0
Operating Junction Temperature	T <sub>J</sub>	150	°C
Storage Temperature Range	T <sub>STG</sub>	-55/150	°C
Thermal Resistance-Junction to Ambient	R <sub>θJA</sub>	120	°C/W

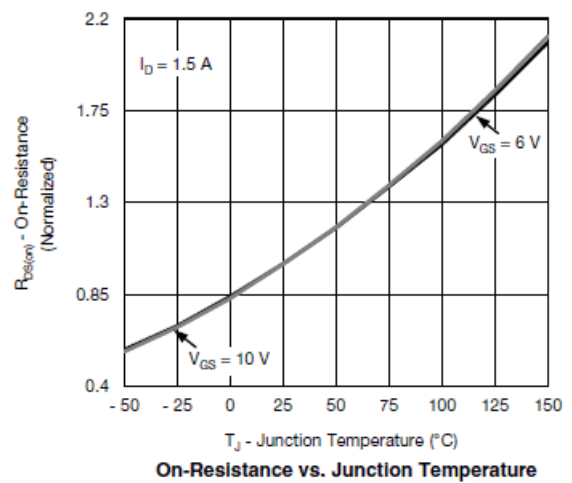
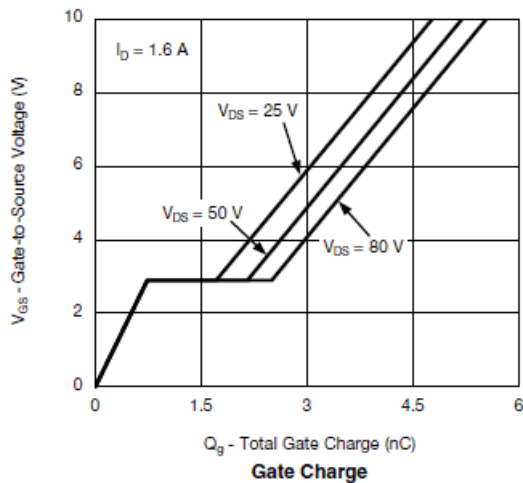
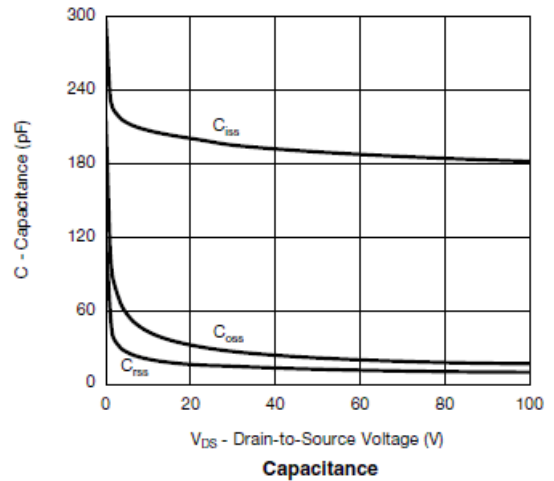
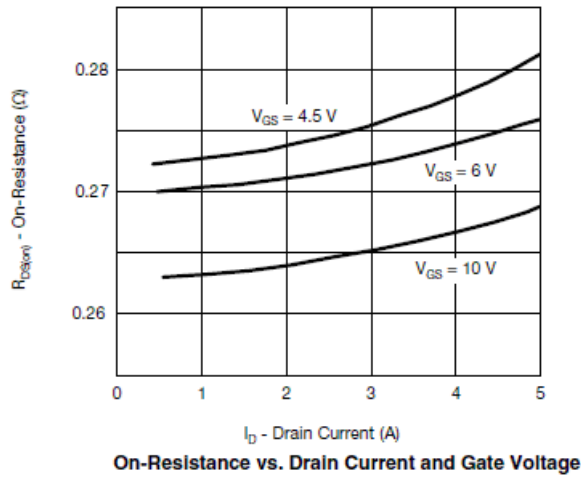
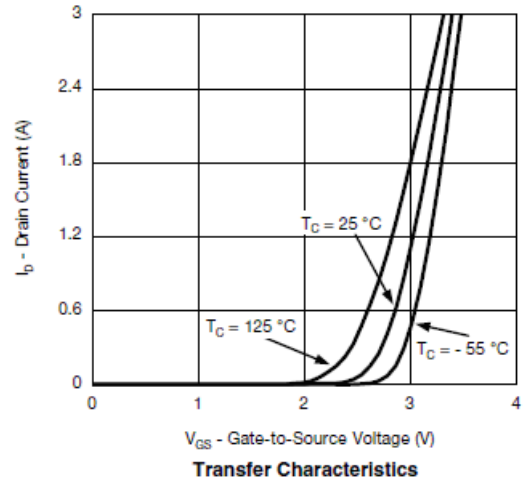
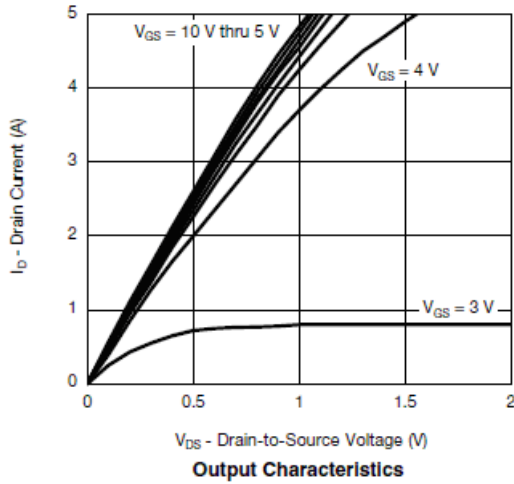
### Electrical Characteristics

(T<sub>A</sub>=25°C Unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ	Max.	Unit
<b>Static</b>						
Drain-Source Breakdown Voltage	V <sub>(BR)DSS</sub>	V <sub>GS</sub> =0V, I <sub>D</sub> =250uA	100			V
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =250uA	1.0		2.0	V
Gate Leakage Current	I <sub>GSS</sub>	V <sub>DS</sub> =0V, V <sub>GS</sub> =±20V			±100	nA
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =80V, V <sub>GS</sub> =0V			1	uA
		V <sub>DS</sub> =80V, V <sub>GS</sub> =0V T <sub>J</sub> =85°C			10	
On-State Drain Current	I <sub>D(on)</sub>	V <sub>DS</sub> ≥ 5V, V <sub>GS</sub> =4.5V	5			A
Drain-Source On-Resistance	R <sub>DS(on)</sub>	V <sub>GS</sub> =10V, I <sub>D</sub> =2.3A		265	285	mΩ
		V <sub>GS</sub> =4.5V, I <sub>D</sub> =1.8A		275	295	
Forward Transconductance	g <sub>FS</sub>	V <sub>DS</sub> =20V, I <sub>D</sub> =1.5A		2		S
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =1.3A, V <sub>GS</sub> =0V		0.85	1.2	V
<b>Dynamic</b>						
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> =50V, V <sub>GS</sub> =4.5V I <sub>D</sub> ≧1.6A		2.8	5.8	nC
Gate-Source Charge	Q <sub>gs</sub>			0.75		
Gate-Drain Charge	Q <sub>gd</sub>			1.4		
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> =50V, V <sub>GS</sub> =0V f=1MHz		200		pF
Output Capacitance	C <sub>oss</sub>			22		
Reverse Transfer Capacitance	C <sub>rss</sub>			13		
Turn-On Time	t <sub>d(on)</sub>	V <sub>DD</sub> =50V, R <sub>L</sub> =39Ω I <sub>D</sub> ≧1.3A, V <sub>GEN</sub> =4.5V R <sub>G</sub> =1Ω		25	50	ns
	t <sub>r</sub>			20	50	
Turn-Off Time	t <sub>d(off)</sub>			15	30	
	t <sub>f</sub>			10	25	

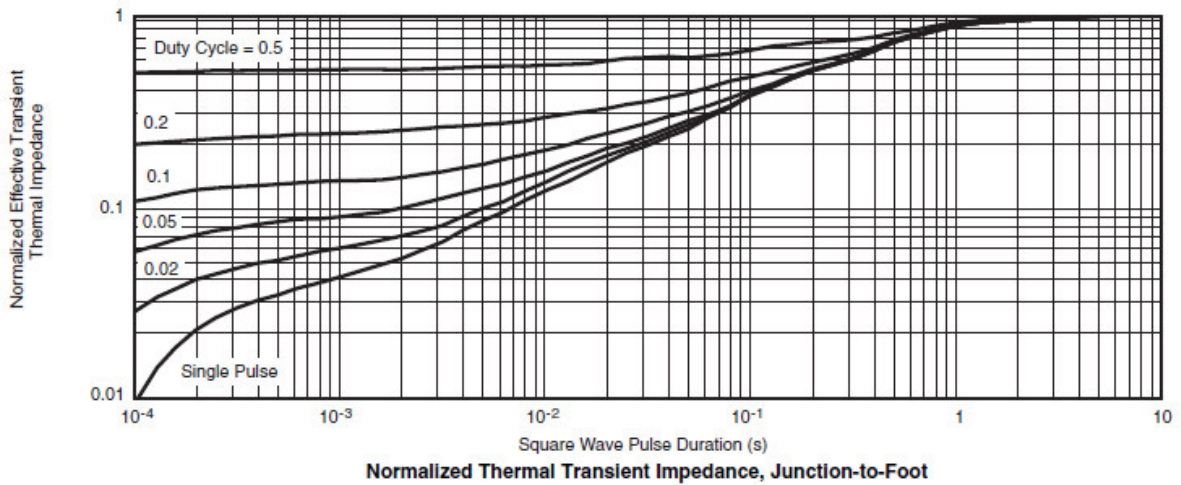
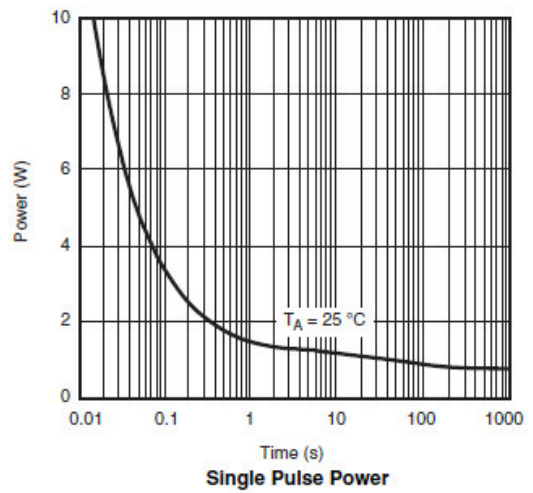
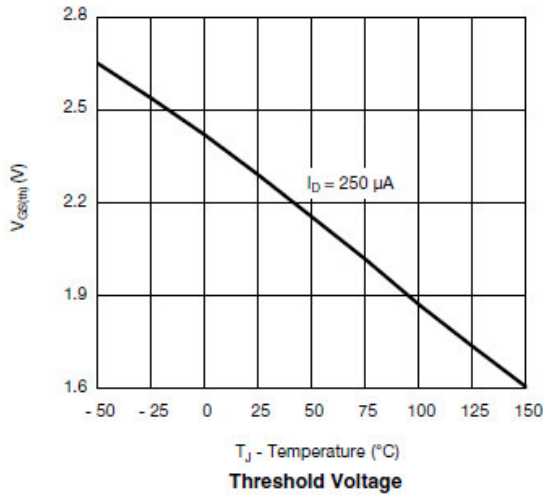
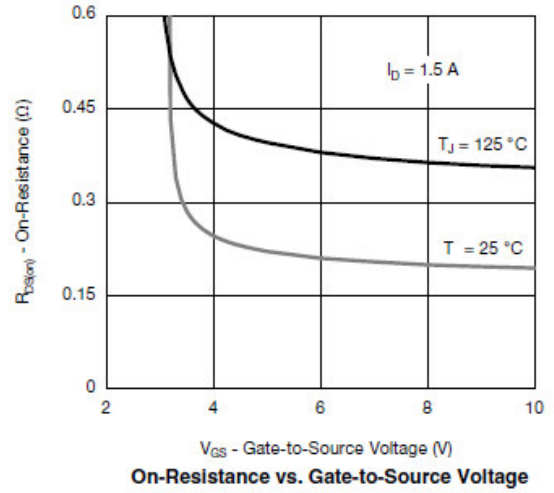
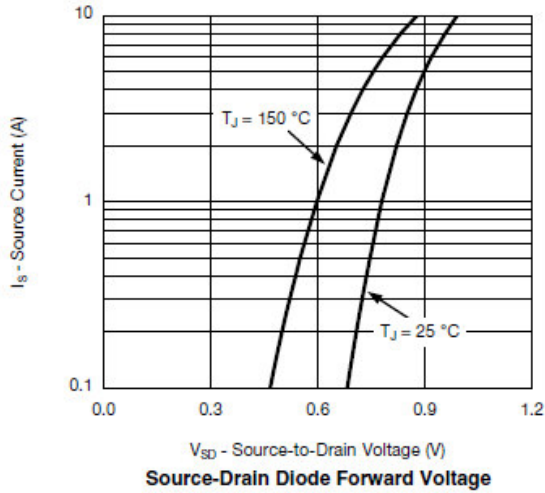


## Typical Characteristics





## Typical Characteristics





**Typical Characteristics**

Gate Charge Test Circuit & Waveform



Resistive Switching Test Circuit & Waveforms

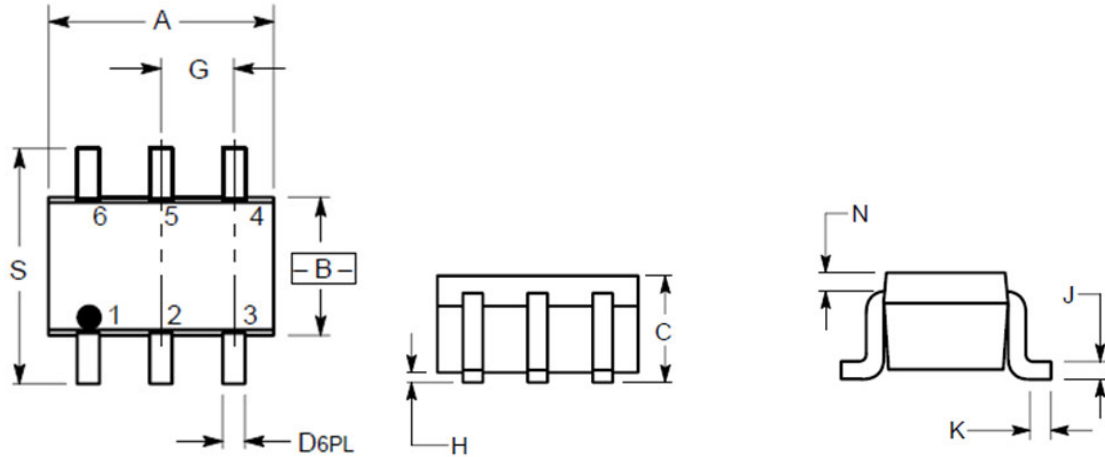


Unclamped Inductive Switching Test Circuit & Waveforms





**Package Information ( SOT-363 )**



⊕ 0.2 (0.008) (M) B (M)

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.071	0.087	1.80	2.20
B	0.045	0.053	1.15	1.35
C	0.031	0.043	0.80	1.10
D	0.004	0.012	0.10	0.30
G	0.026 BSC		0.65 BSC	
H	---	0.004	---	0.10
J	0.004	0.010	0.10	0.25
K	0.004	0.012	0.10	0.30
N	0.008 REF		0.20 REF	
S	0.079	0.087	2.00	2.20

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