Alfa-MOS Technology

AFP8485

100V P-Channel Enhancement Mode MOSFET

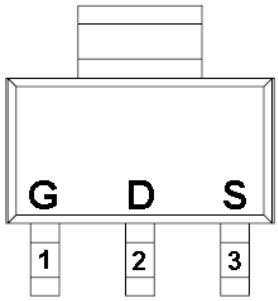
General Description

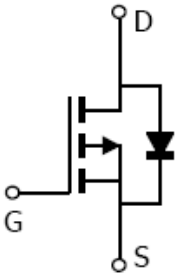
AFP8485, P-Channel enhancement mode MOSFET, uses Advanced Trench Technology to provide excellent $R_{DS(ON)}$, low gate charge.
These devices are particularly suited for low voltage power management, and low in-line power loss are needed in commercial industrial surface mount applications.

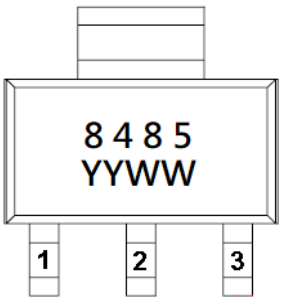
Features

- -100V/-1.5A,$R_{DS(ON)}$=580mΩ@V_{GS}=-10V
- -100V/-0.5A,$R_{DS(ON)}$=625mΩ@V_{GS}=-4.5V
- Super high density cell design for extremely low $R_{DS\ (ON)}$
- SOT-223 package design

Pin Description (SOT-223)







Application

- Motor and Load Control
- LCD TV Inverter & AD/DC Inverter Systems.
- Backlight Inverter for LCD Display
- Load Switch
- CCFL Inverter

Pin Define

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

Ordering Information

Part Ordering No.	Part Marking	Package	Unit	Quantity
AFP8485S223RG	8485	SOT-223	Tape & Reel	2500 EA

※ YY year code
※ WW week code
※ AFP8485S223RG : 13” Tape & Reel ; Pb- Free ; Halogen –Free

Absolute Maximum Ratings

(T_A=25℃ Unless otherwise noted)

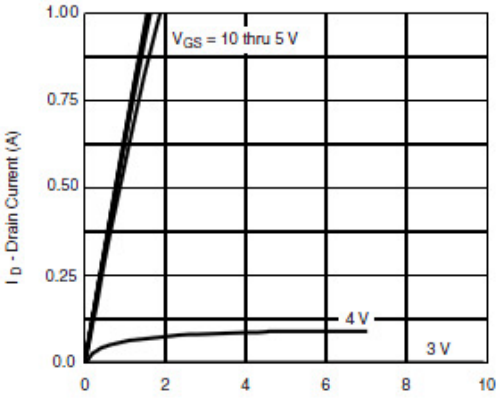
Parameter		Symbol	Value	Unit
Drain-Source Voltage		V_{DSS}	-100	V
Gate –Source Voltage		V_{GSS}	±20	V
Continuous Drain Current(T_J=150℃)	T_A=25℃	I_D	-1.5	A
	T_A=70℃		-0.5	
Pulsed Drain Current		I_{DM}	-4.0	A
Continuous Source Current(Diode Conduction)		I_S	-1.0	A
Power Dissipation	T_A=25℃	P_D	2.8	W
	T_A=70℃		1.2	
Operating Junction Temperature		T_J	150	℃
Storage Temperature Range		T_{STG}	-55/150	℃
Thermal Resistance-Junction to Ambient		$R_{\theta JA}$	120	℃/W

Electrical Characteristics

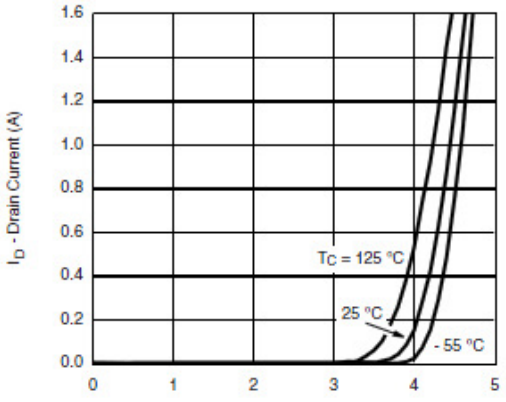
(T_A=25℃ Unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ	Max.	Unit
Static						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V,I_D=-250uA	-100			V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS},I_D=-250uA	-1.0		-2.5	
Gate Leakage Current	I_{GSS}	V_{DS}=0V,V_{GS}=±12V			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-80V,V_{GS}=0V			-1	uA
		V_{DS}=-80V,V_{GS}=0V T_J=85℃			-30	
On-State Drain Current	$I_{D(on)}$	V_{DS}≦-15V,V_{GS}=-10V	-1.6			A
Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS}=-10V,I_D=-1.5A		490	580	mΩ
		V_{GS}=-4.5V,I_D=-0.5A		525	625	
Forward Transconductance	g_{FS}	V_{DS}=-15V,I_D=-0.5A		2.8		S
Diode Forward Voltage	V_{SD}	I_S=-0.5A,V_{GS}=0V		-0.75	-1.3	V
Dynamic						
Total Gate Charge	Q_g	V_{DS}=-75V,V_{GS}=-10V I_D≡-0.5A		9	20	nC
Gate-Source Charge	Q_{gs}			2.5		
Gate-Drain Charge	Q_{gd}			3.5		
Input Capacitance	C_{iss}	V_{DS}=-25V,V_{GS}=0V f=1MHz		450	650	pF
Output Capacitance	C_{oss}			50		
Reverse Transfer Capacitance	C_{rss}			30		
Turn-On Time	$t_{d(on)}$	V_{DD}=-75V,R_L=75Ω I_D≡-1.0A,V_{GEN}=-10V R_G=6.0Ω		10	20	ns
	t_r			15	30	
Turn-Off Time	$t_{d(off)}$			20	40	
	t_f			15	30	

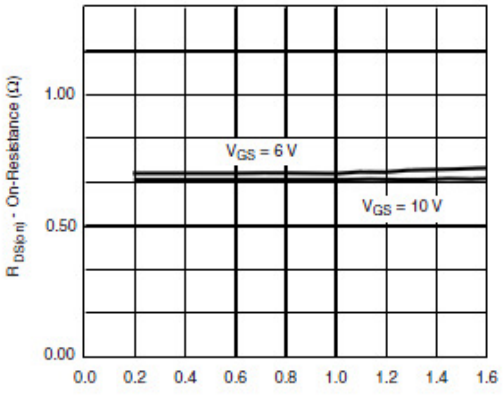
Typical Characteristics



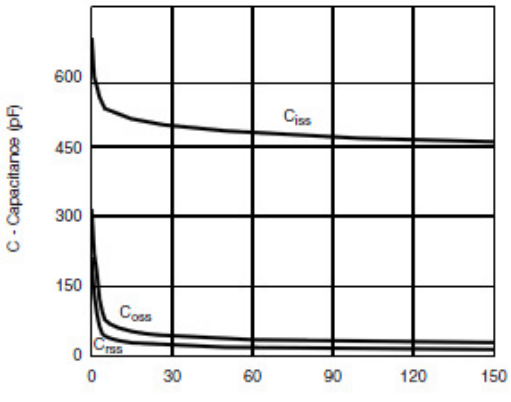
Output Characteristics



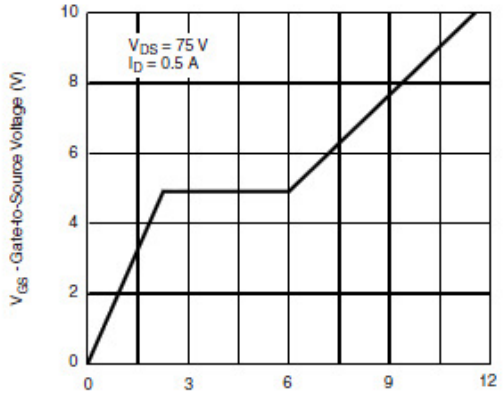
Transfer Characteristics



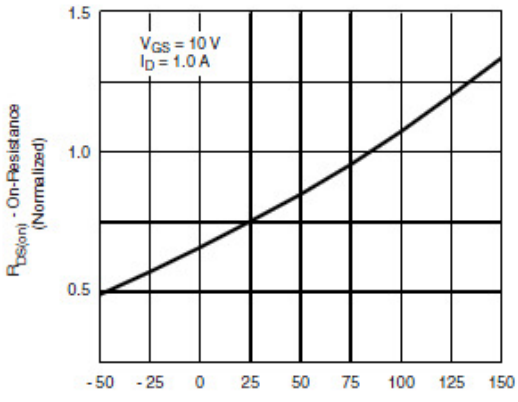
On-Resistance vs. Drain Current



Capacitance

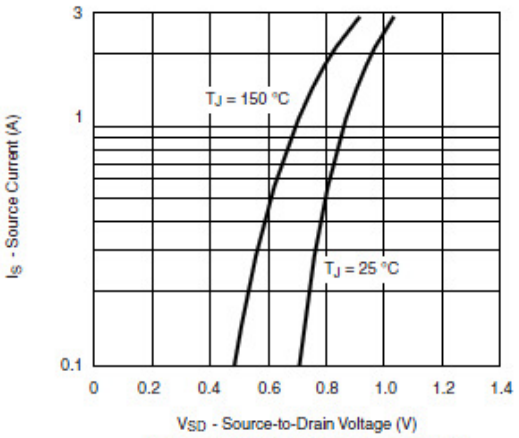


Gate Charge

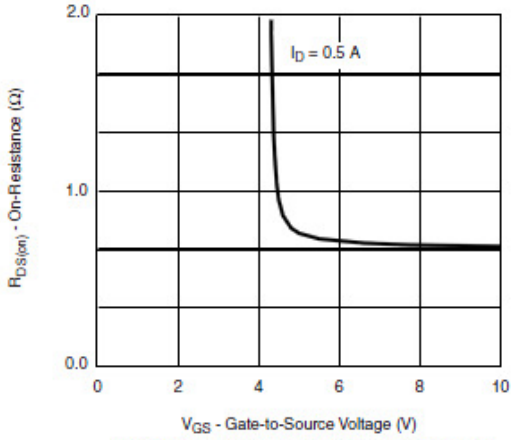


On-Resistance vs. Junction Temperature

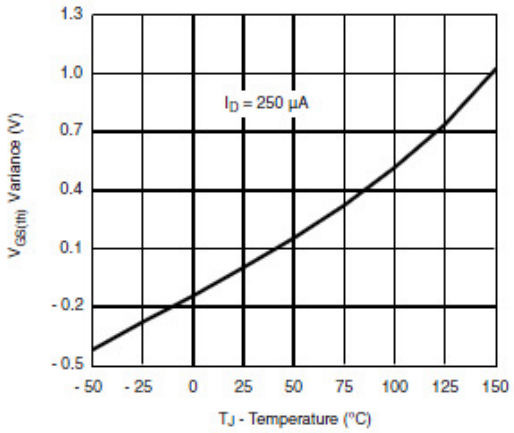
Typical Characteristics



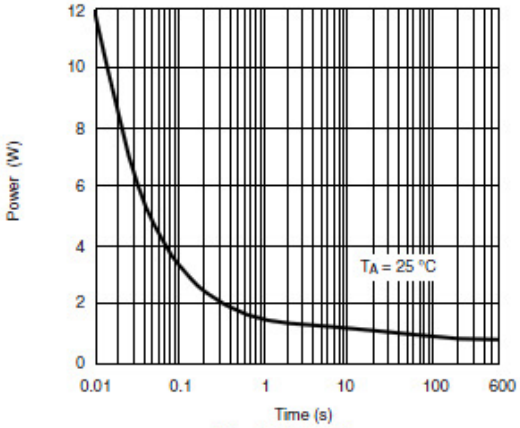
Source-Drain Diode Forward Voltage



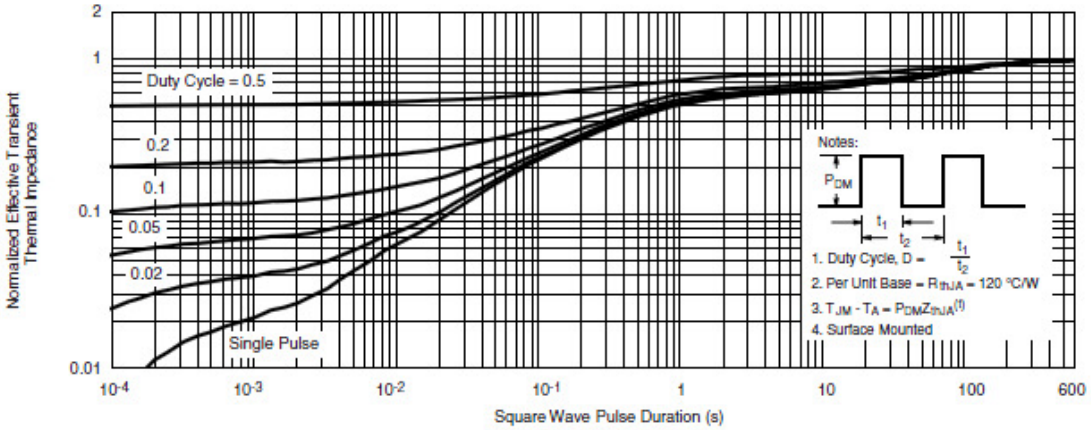
On-Resistance vs. Gate-to-Source Voltage



Threshold Voltage



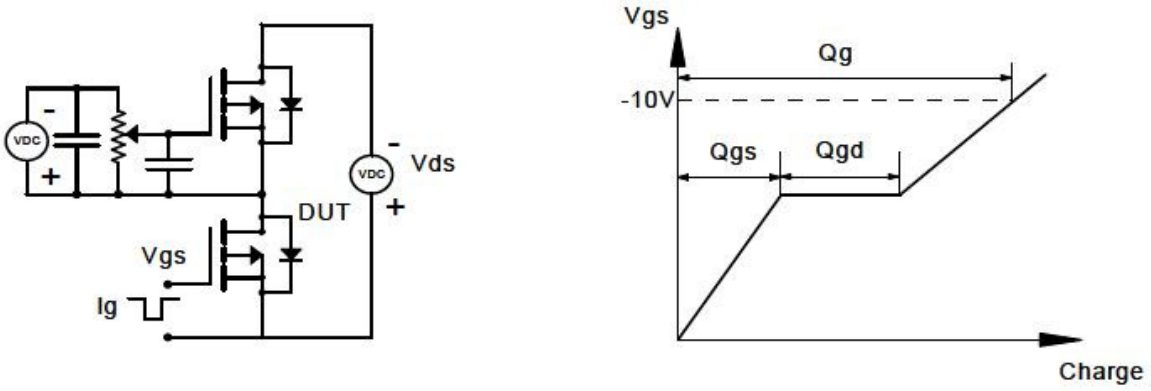
Single Pulse Power



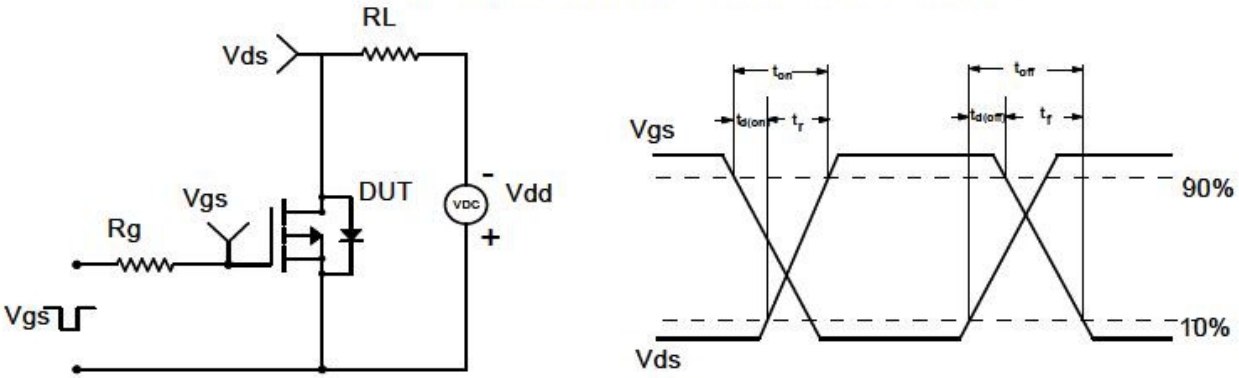
Normalized Thermal Transient Impedance, Junction-to-Ambient

Typical Characteristics

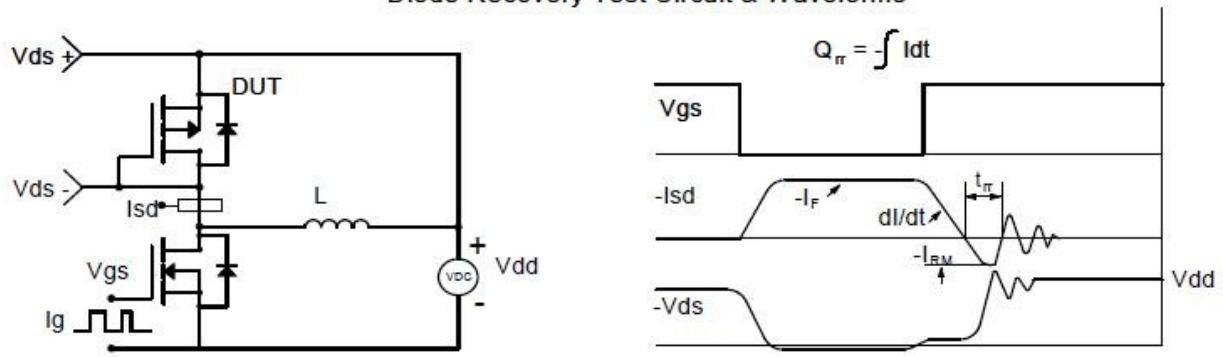
Gate Charge Test Circuit & Waveform



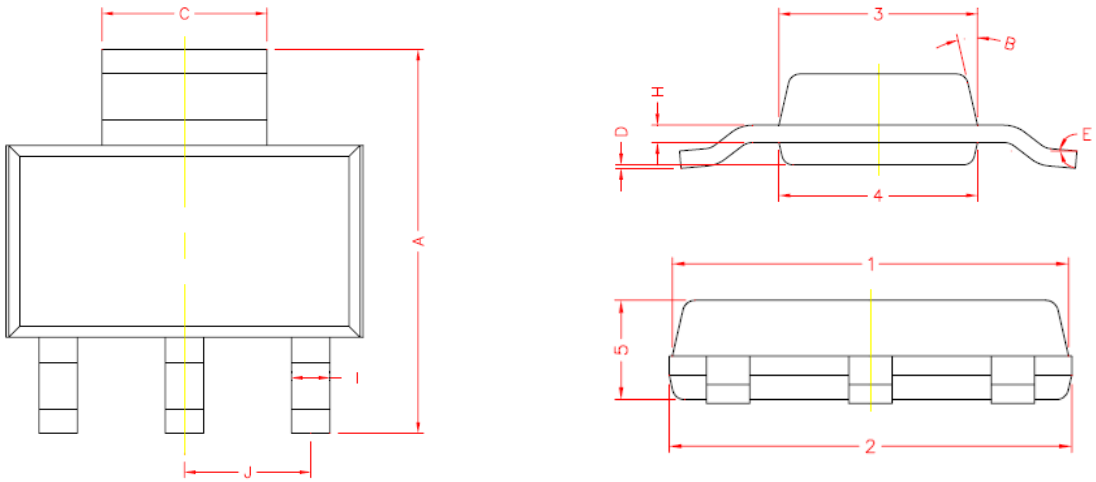
Resistive Switching Test Circuit & Waveforms



Diode Recovery Test Circuit & Waveforms



Package Information (SOT-223)



REF.	DIMENSIONS	
	Millimeters	
	Min.	Max.
A	6.70	7.30
C	2.90	3.10
D	0.02	0.10
E	0°	10°
I	0.60	0.80
H	0.25	0.35
B	13° TYP.	
J	2.30 REF.	
1	6.30	6.70
2	6.30	6.70
3	3.30	3.70
4	3.30	3.70
5	1.40	1.80

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