-30V/-20A P-Channel Advanced Power MOSFET

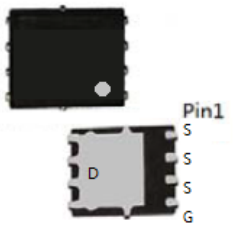
Features

- - 4.5V Logic Level Control
- PDFN3333 SMD Package

Applications

- High Side Load Switch
- Battery Switch
- Optimized for Power Management Applications for Portable Products, such as Aeromodelling, Power bank, Brushless motor, Main board , and Others

BVDSS	-30	V
ID	-20	A
R_{DSON}@V_{GS}=-10V	15	mΩ
R_{DSON}@V_{GS}=-5V	20	mΩ



PDFN3333

Order Information

Product	Package	Marking	Packing
AM30QP20T	PDFN3333	PTQ20P03	5000PCS/Reel

Maximum Ratings and Thermal Characteristics (TC = 25oC unless otherwise noted)

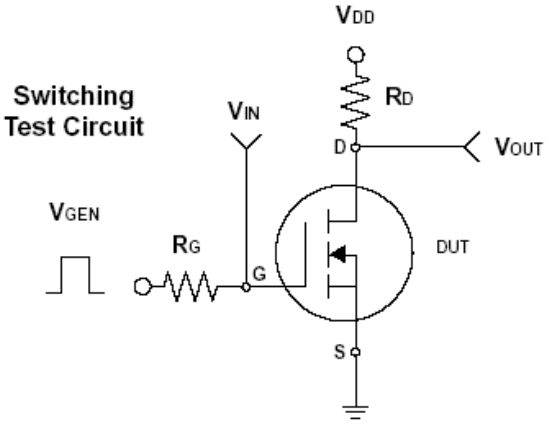
Parameter		Symbol	Limit	Unit
Drain-Source Voltage		V_{DS}	-30	V
Gate-Source Voltage		V_{GS}	± 20	
Continuous Drain Current		I_D	-20	A
Pulsed Drain Current		I_{DM}	-60	
Maximum Power Dissipation	TA = 25°C	P_D	2.5	W
	TA = 75°C		1.2	
Operating Junction and Storage Temperature Range		T_J, T_{stg}	-55 to 150	°C
Junction-to-Ambient Thermal Resistance (PCB mounted)		$R_{\theta JA}$	50	°C/W

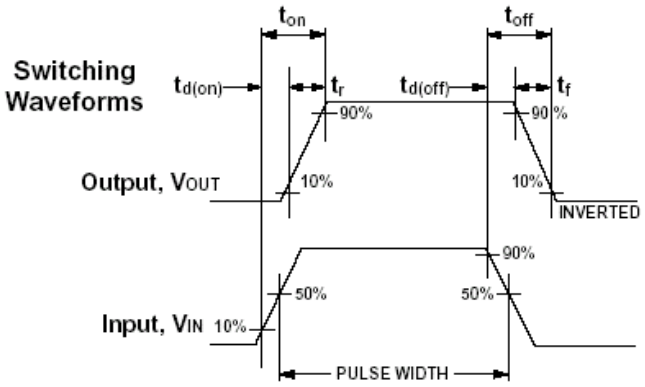
-30V/-20A P-Channel Advanced Power MOSFET

ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static						
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS} = 0V, I_D = -250uA	-30			V
Drain-Source On-State Resistance	$R_{DS(on)}$	V_{GS} = -10V, I_D = -10.5A		15.0	22.0	mΩ
Drain-Source On-State Resistance	$R_{DS(on)}$	V_{GS} = -4.5V, I_D = -6.0A		20.0	33.0	
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D = -250uA	-1	-1.4	-3	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = -24V, V_{GS} = 0V			-1	uA
Gate Body Leakage	I_{GSS}	V_{GS} = ± 20V, V_{DS} = 0V			± 100	nA
Forward Transconductance	g_{fs}	V_{DS} = -10V, I_D = -5A		21	__	S
Dynamic						
Total Gate Charge	Q_g	V_{DS} = -15V, I_D = -9.1A V_{GS} = 10V		30		nC
Gate-Source Charge	Q_{gs}			5.3		
Gate-Drain Charge	Q_{gd}			7.52		
Turn-On Delay Time	$t_{d(on)}$	V_{DD} = -15V, RL=15Ω I_D = -1A, V_{GEN} = -10V R_G = 6Ω		14		ns
Turn-On Rise Time	t_r			16		
Turn-Off Delay Time	$t_{d(off)}$			95		
Turn-Off Fall Time	t_f			65		
Input Capacitance	C_{iss}	V_{DS} = -15 V , V_{GS} = 0V f = 1.0 MHz		1500		pF
Output Capacitance	C_{oss}			327		
Reverse Transfer Capacitance	C_{rss}			276		
Source-Drain Diode						
Diode Forward Voltage	V_{SD}	I_S = -10 A, V_{GS} = 0V		1.2		V

Note: Pulse test: pulse width <= 300us, duty cycle<= 2%





Typical Performance Characteristics

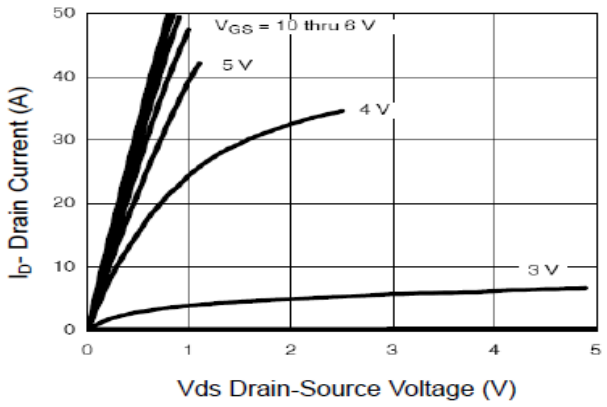


Figure1. Output Characteristics

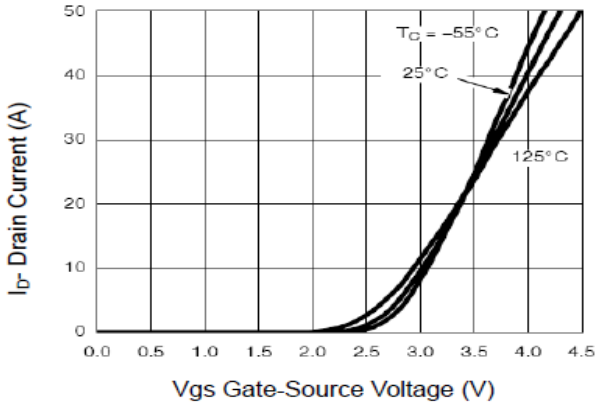


Figure2. Transfer Characteristics

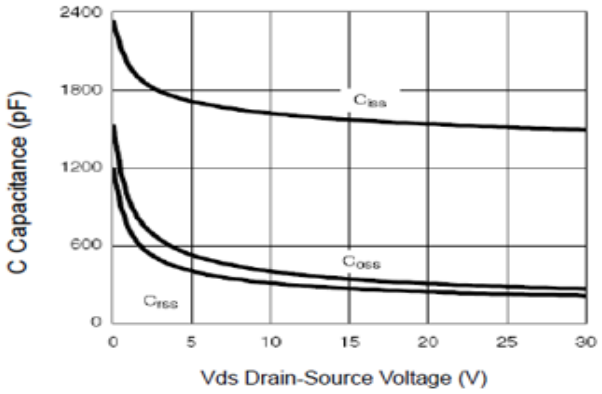


Figure3. Capacitance Characteristics

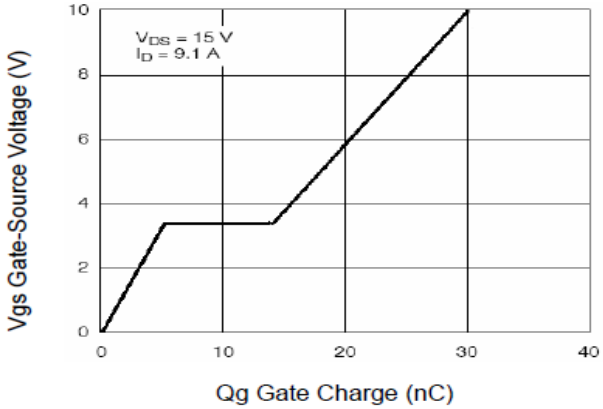


Figure4. Gate Charge

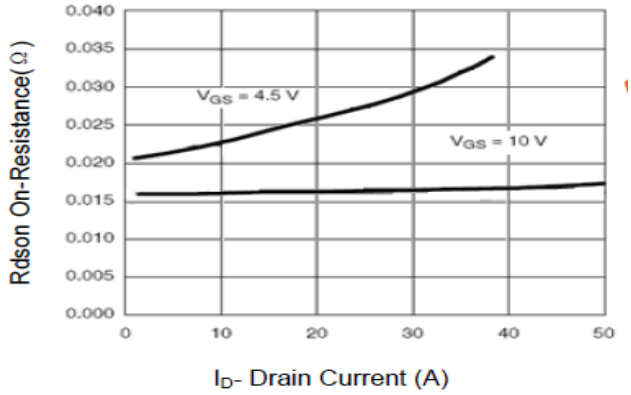


Figure5. Drain-Source on Resistance

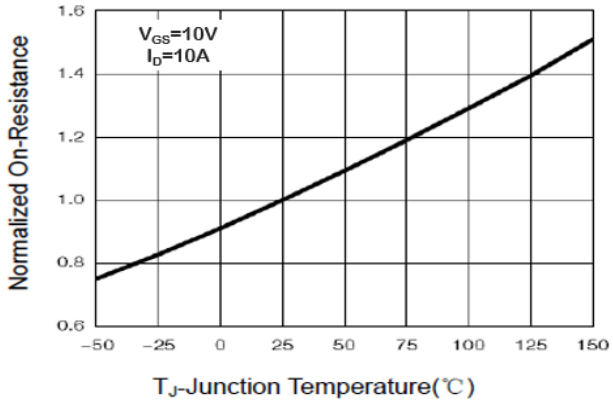


Figure6. Drain- Source on Resistance

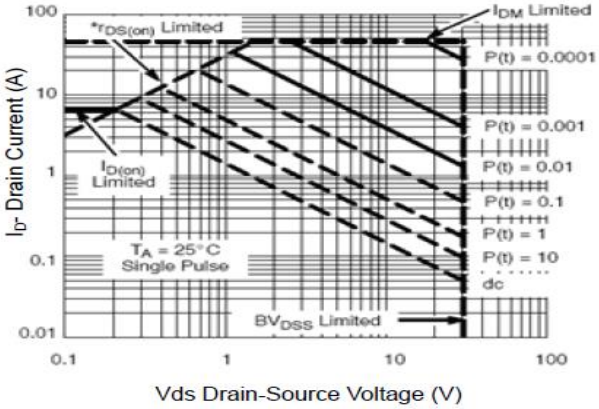


Figure7. Safe Operation Area

Package Outline Dimensions (Units: mm)

