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AON7403

P-Channel Enhancement Mode MOSFET

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GENERAL FEATURES

- V_{DS} =-30V,I_D =-50A

  $R_{DS(ON)}$ 8.0mΩ @V_{GS}=-10V typ

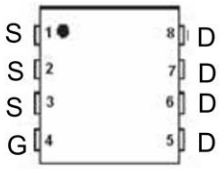
  $R_{DS(ON)}$ 18mΩ @V_{GS}=-4.5V typ

Application

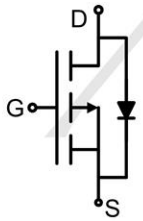
- Load/Power Switching
- Interfacing Switching
- Logic Level Shift

Package and Pin Configuration

PDFN3333 top view



Circuit diagram



Marking

Absolute Maximum Ratings (T_A=25℃unless otherwise noted)

c

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V_{DS}	-30	V
Gate-Source Voltage	V_{GS}	20	V
Drain Current-Continuous	I_D	-50	A
Drain Current-Continuous(T_C=100℃)	I_D (100℃)	-32	A
Pulsed Drain Current	I_{DM}	-200	A
Maximum Power Dissipation	P_D	38	W
Single pulse avalanche energy (Note 5)	E_{AS}	125	mJ
Operating Junction and Storage Temperature Range	T_J,T_{STG}	-55 To 150	℃

Electrical Characteristics (Tj=25℃unless otherwise noted)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Off Characteristics						
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V I_D= -250μA	-30	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-24V,V_{GS}=0V	-	-	1	μA
Gate-Body Leakage Current	I_{GSS}	V_{GS}= 20V,V_{DS}=0V	-	-	100	nA
On Characteristics (Note 3)						
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS},I_D=-250μA	-1.2	1.5	-2.5	V
Drain-Source On-State Resistance	$R_{DS(ON)}$	V_{GS}=-10V, I_D=-30A	-	8.0	15	mΩ
		V_{GS}=-4.5V, I_D=-15A	-	18	24	mΩ
Forward Transconductance	g_{FS}	V_{DS}=-5V, I_D=-18A	-	25	-	S
Dynamic Characteristics (Note4)						
Input Capacitance	C_{lss}	V_{DS}=-15V,V_{GS}=0V, F=1.0MHz	-	3448	-	PF
Output Capacitance	C_{oss}		-	508	-	PF
Reverse Transfer Capacitance	C_{rss}		-	421	-	PF
Switching Characteristics (Note 4)						
Turn-on Delay Time	$t_{d(on)}$	V_{DD}=-15V,I_D=-15A,R_L=1Ω V_{GS}=-10V,R_G=3.3Ω	-	9.4	-	nS
Turn-on Rise Time	t_r		-	10.2	-	nS
Turn-Off Delay Time	$t_{d(off)}$		-	117	-	nS
Turn-Off Fall Time	t_f		-	24	-	nS
Total Gate Charge	Q_g	V_{DS}=-15V,I_D=-15A, V_{GS}=-4.5V	-	30	-	nC
Gate-Source Charge	Q_{gs}		-	10	-	nC
Gate-Drain Charge	Q_{gd}		-	10.4	-	nC
Drain-Source Diode Characteristics						
Diode Forward Voltage (Note 3)	V_{SD}	V_{GS}=0V,I_S =-1A	-	-	-1	V
Diode Forward Current (Note 2)	I_S		-	-	-50	A

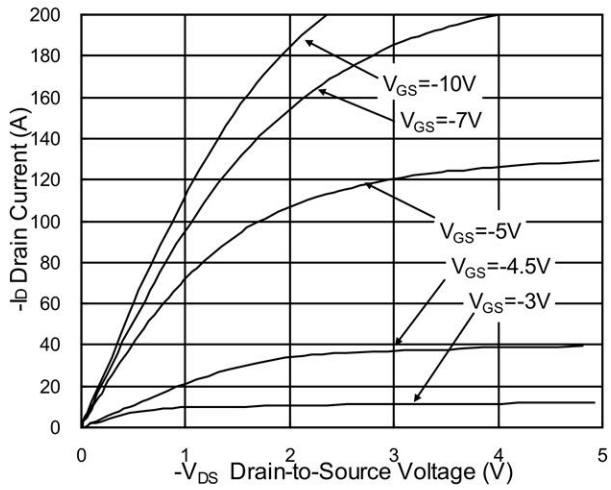


Fig.1 Typical Output Characteristics

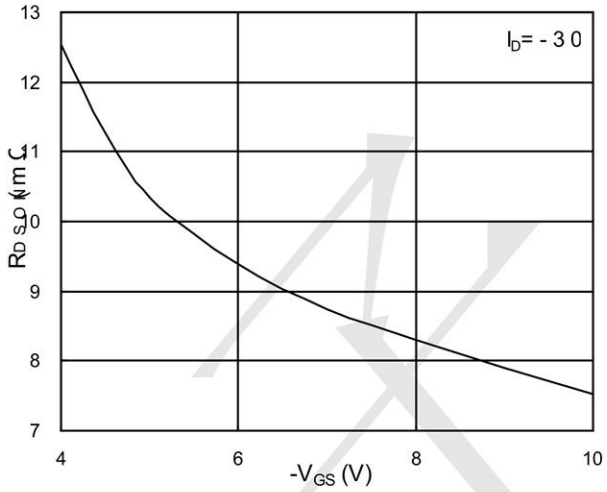


Fig.2 On-Resistance v.s Gate-Source

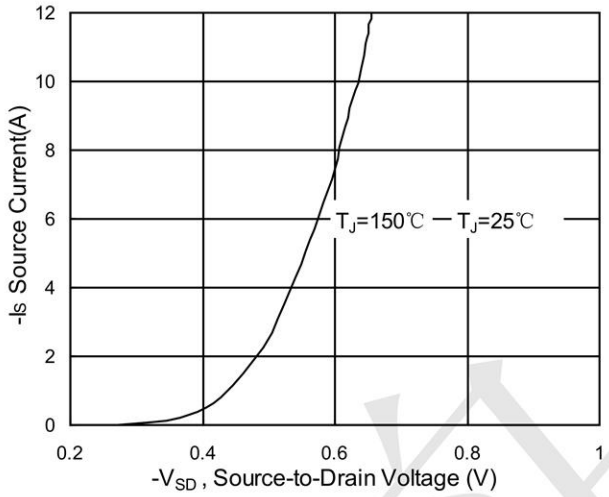


Fig.3 Forward Characteristics Of Reverse

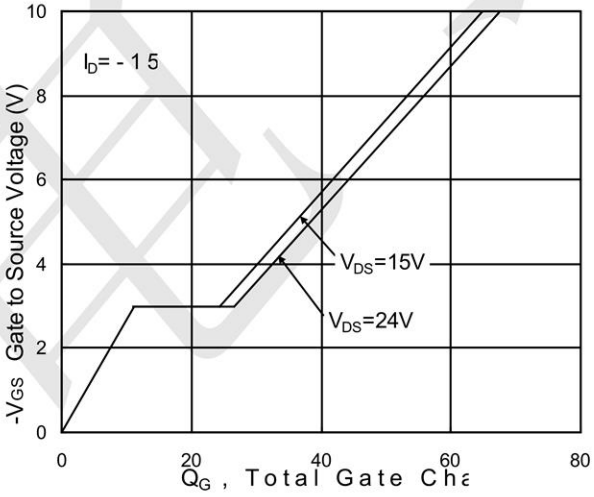


Fig.4 Gate-Charge Characteristics

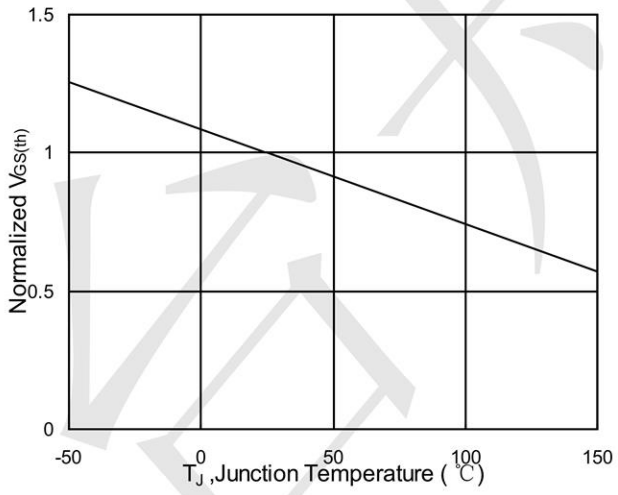


Fig.5 Normalized $V_{GS(th)}$ v.s T_J

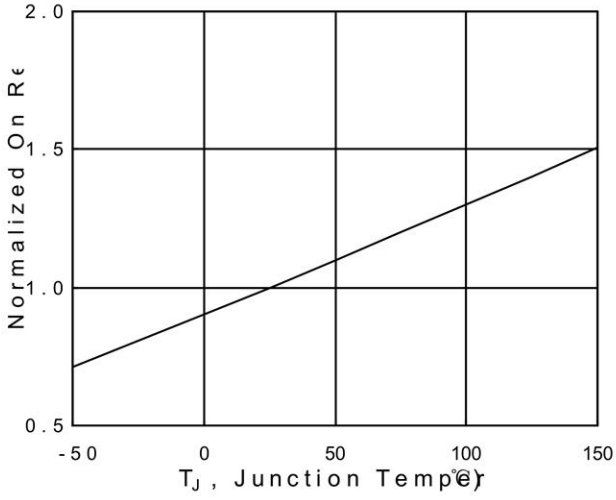


Fig.6 Normalized R_{DSON} v.s T_J

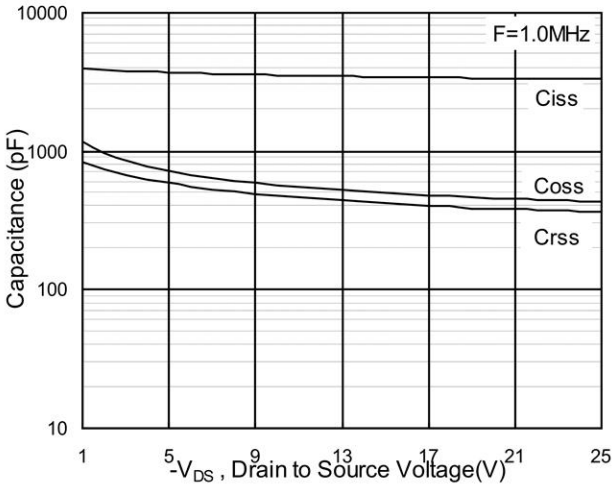


Fig.7 Capacitance

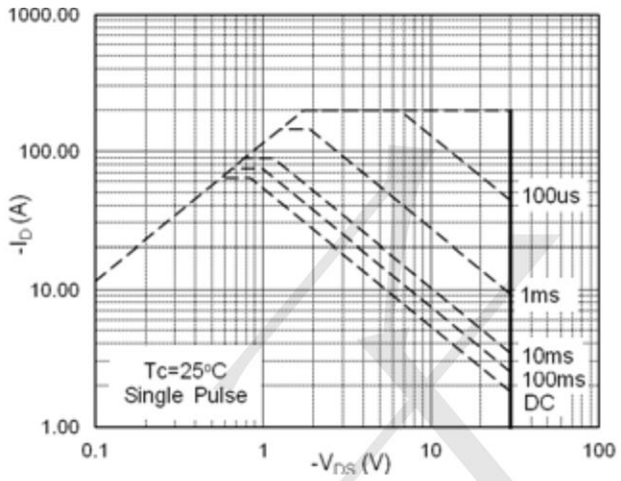


Fig.8 Safe Operating Area

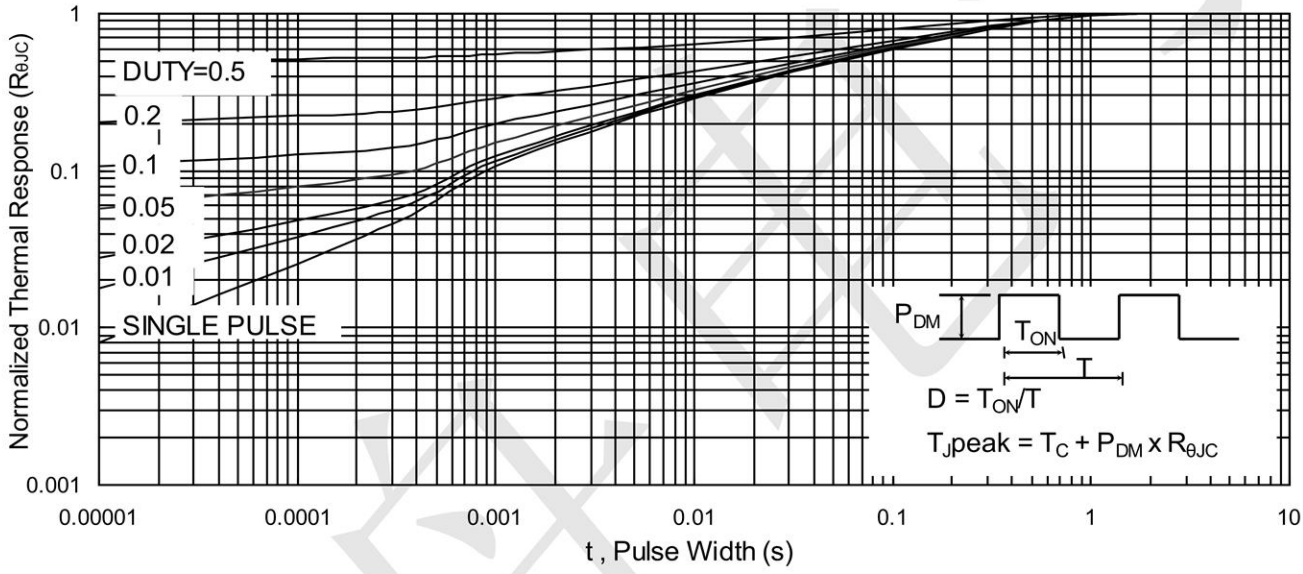


Fig.9 Normalized Maximum Transient Thermal Impedance

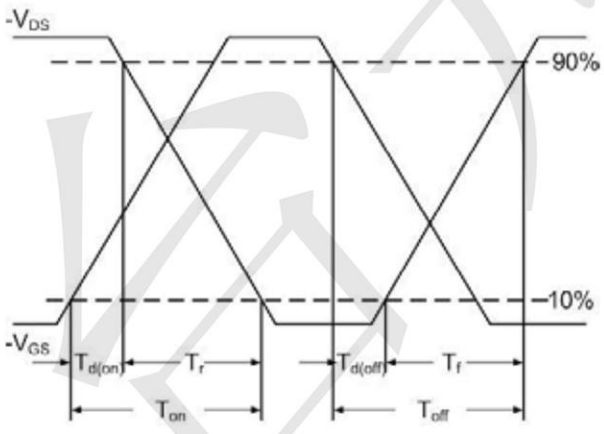


Fig.10 Switching Time Waveform

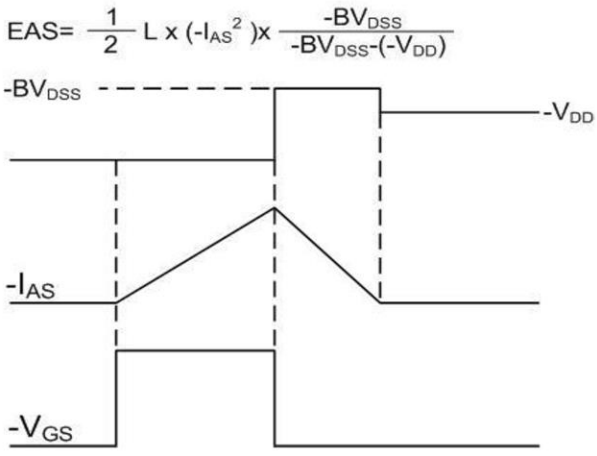
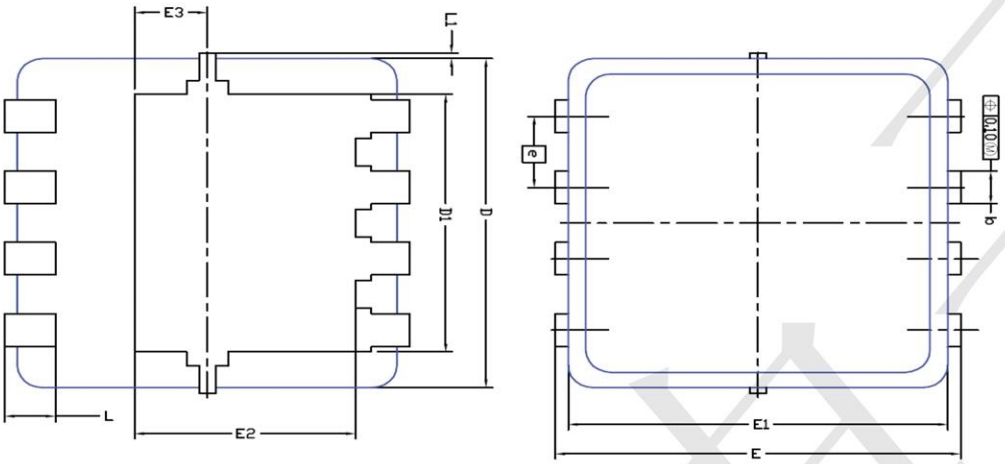
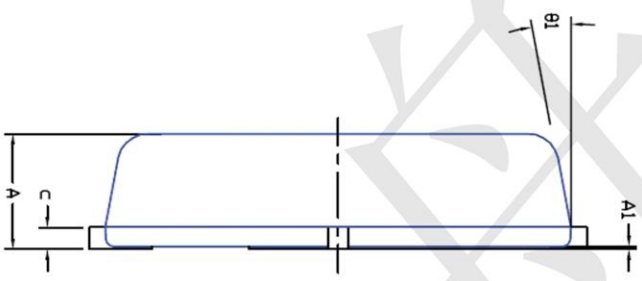


Fig.11 Unclamped Inductive Switching Waveform

PDFN3333 Package Information





DIM.	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.700	0.80	0.900	0.0276	0.0315	0.0354
A1	0.00	---	0.05	0.000	---	0.002
b	0.24	0.30	0.35	0.009	0.012	0.014
c	0.10	0.152	0.25	0.004	0.006	0.010
D	3.00 BSC			0.118 BSC		
D1	2.35 BSC			0.093 BSC		
E	3.20 BSC			0.126 BSC		
E1	3.00 BSC			0.118 BSC		
E2	1.75 BSC			0.069 BSC		
E3	0.575 BSC			0.023 BSC		
e	0.65 BSC			0.026 BSC		
L	0.30	0.40	0.50	0.0118	0.0157	0.0197
L1	0	---	0.100	0	---	0.004
θ1	0°	10°	12°	0°	10°	12°