DACO SEMICONDUCTOR

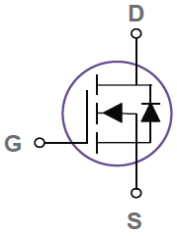
DAM008N120F1

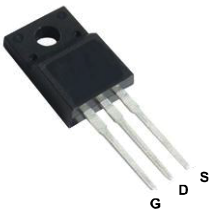
Silicon N-Channel Power MOSFET

V_{DSS}	1200V
$I_{D(@25℃)}$	8A
$R_{DS(ON)}$ typ.	1.5Ω

Features

- Fast Switching
- Low On-Resistance
- Low Gate Charge Minimize Switching Loss
- Fast Recovery Body Diode
- 100% Single Pulse Avalanche Energy Test

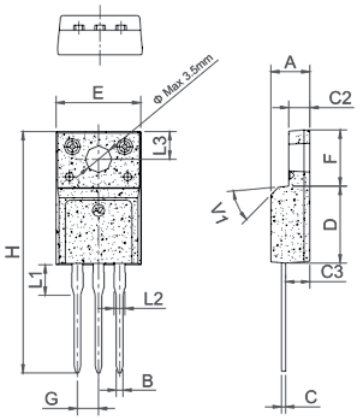




Applications

- Adaptor
- Charger
- SMPS Standby Power

Package Dimensions



Absolute Maximum Ratings

(Tc = 25℃ unless otherwise specified)

Parameter	Symbol	Ratings	Unit
Drain Source Voltage	V_{DS}	1200	V
Gate Source Voltage	V_{GS}	± 30	V
Drain Current Continuous	I_D	8	A
Drain Current Pulsed @ V_{GS}= 10V	I_{DM}	32	A
Single Pulse Avalanche Energy	E_{AS}	600	mJ
Power Dissipation @ T_C= 25°C	P_D	45	W
Storage Temperature Range	T_{STG}	-55 to +150	°C
Operating Junction Temperature Range	T_J	-55to +150	°C
Thermal Resistance Junction to Case	$R_{\theta JC}$	0.37	°C/W
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	50	°C/W

*Caution stresses greater than those in the "Absolute Maximum Ratings" may cause permanent damage to the device.

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.50		4.90	0.177		0.193
B	0.74	0.80	0.83	0.029	0.031	0.033
C	0.47		0.65	0.019		0.026
C2	2.45		2.75	0.096		0.108
C3	2.60		3.00	0.102		0.118
D	8.80		9.30	0.346		0.366
E	9.80		10.4	0.386		0.410
F	6.40		6.80	0.252		0.268
G		2.54			0.1	
H	28.0		29.8	1.102		1.173
L1		3.63			0.143	
L2	1.14		1.70	0.045		0.067
L3		3.30			0.130	
V1		45°			45°	

Electrical Characteristics @ T_C =25°C (unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
OFF Characteristics						
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V，I_{DS}=0.25mA	1200	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{GS}=0V，V_{DS}=1200V，T_a=25°C	-	-	10	μA
Gate To Source Forward Leakage	$I_{GSS(F)}$	V_{GS}=±30V，V_{DS}= 0V	-	-	±100	nA
ON Characteristics						
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}，I_{DS}=0.25mA	3	-	5	V
Drain-Source On-State Resistance	$R_{DS(on)}$	V_{GS}=10V，I_{DS}=4A	-	1.5	1.85	Ω
Forward Transconductance	g_{fs}	V_{DS}=50V，I_D =3A	-	8	-	S
Dynamic Characteristics						
Input Capacitance	C_{iss}	V_{DS}=25V	-	2730	-	pF
Output Capacitance	C_{oss}	V_{GS}=0V	-	250	-	
Reverse Transfer Capacitance	C_{rss}	Freq.=1MHz	-	38	-	
Switching Characteristics						
Turn-On Delay Time	$t_{d(on)}$	V_{DD}=600V	-	15	-	ns
Rise Time	t_r	V_{GS}=15V	-	10	-	
Turn-Off Delay Time	$t_{d(off)}$	I_D=3A	-	50	-	
Fall Time	t_f	R_G =4.7Ω	-	33	-	
Total Gate Charge	Q_g	V_{DS}=600V	-	75	-	nC
Gate to Source Charge	Q_{gs}	V_{GS}=10V	-	16	-	
Gate to Drain Charge	Q_{gd}	I_{DS}=3A	-	32	-	
Source-Drain Diode Characteristics						
Diode Forward Voltage	V_{SD}	V_{GS}=0V，I_S=8A	-	-	1.5	V
Continuous Source Current (Body Diode)	I_{SD}		-	-	8	A
Max. Pulsed Current (Body Diode)	I_{SM}		-	-	32	A
Reverse Recovery Time	T_{rr}	V_{GS}=0V I_S=8A，T_J=25°C di_F/dt=100A/μs	-	1100	-	ns
Reverse Recovery Charge	Q_{rr}		-	15	-	μC

*Pulse Width < 380μs, Duty Cycle < 2%.

Typical Performance Characteristics

Figure 1. Output Characteristics

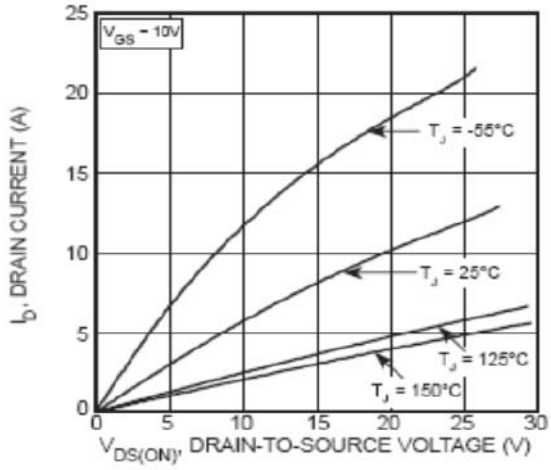


Figure 2. Output Characteristics

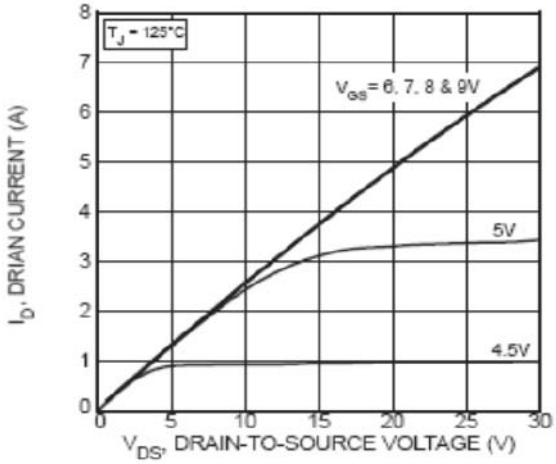


Figure 3. $R_{DS(no)}$ vs Junction Temperature

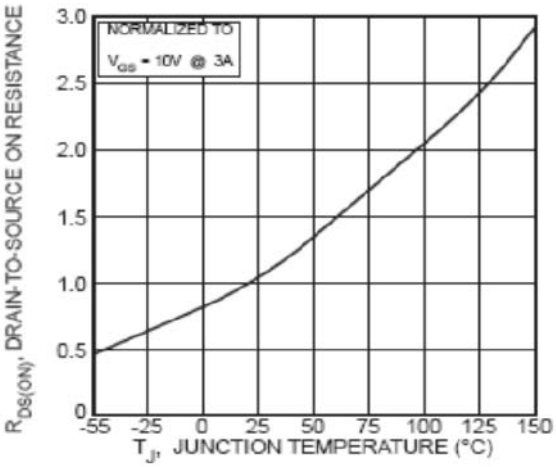


Figure 4. Transfer Characteristics

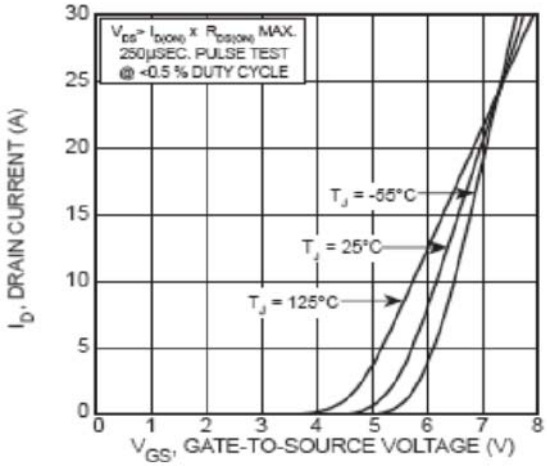


Figure 5. Gate vs Drain Current

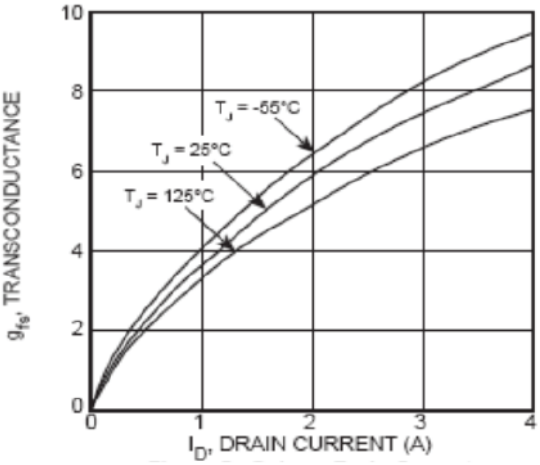
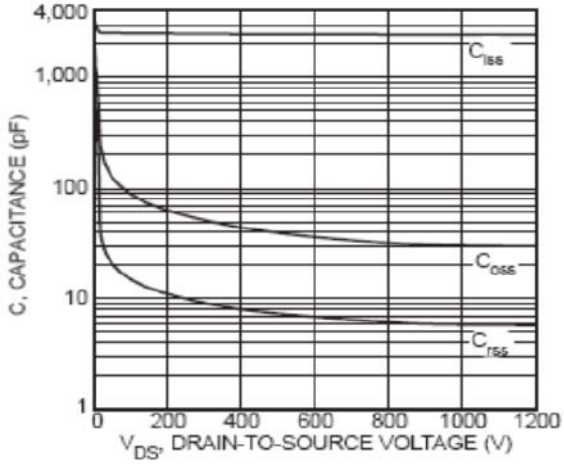


Figure 6. Capacitance vs Drain-to-Source Voltage



Typical Performance Characteristics

Figure 7. Gate Charge vs Gate-to-Source Voltage

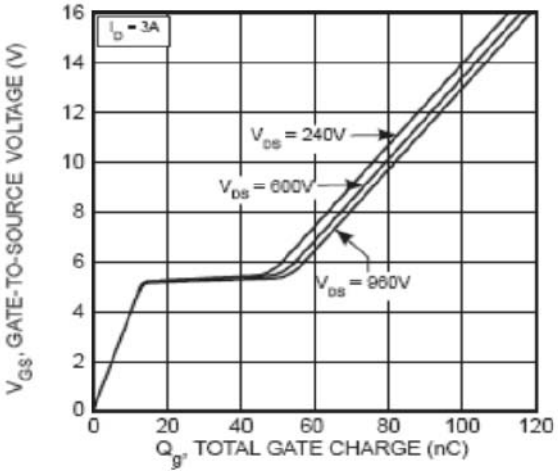


Figure 8. Reverse Drain Current vs Source-to Drain Voltage

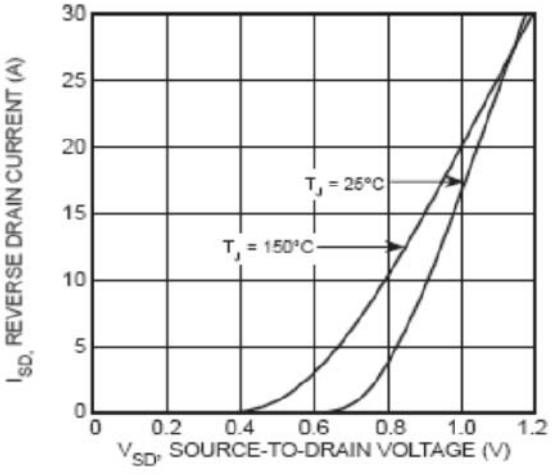


Figure 9. Forward Safe Operating Area

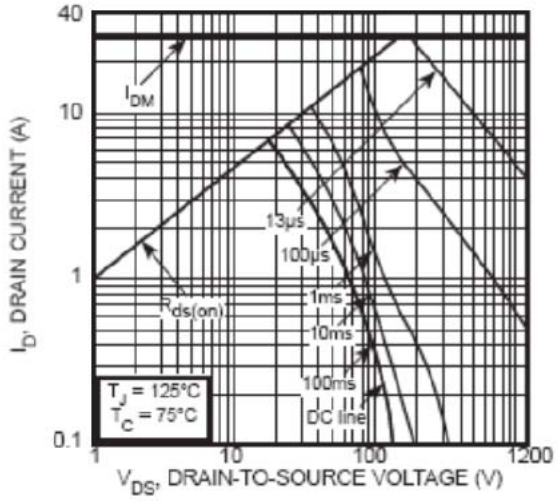


Figure 10. Max. Forward Safe Operating Area

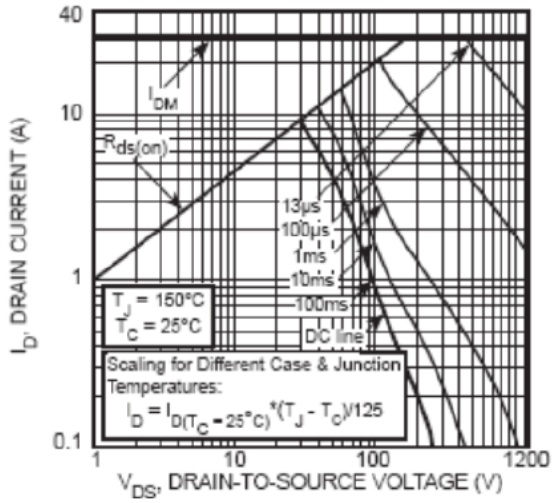
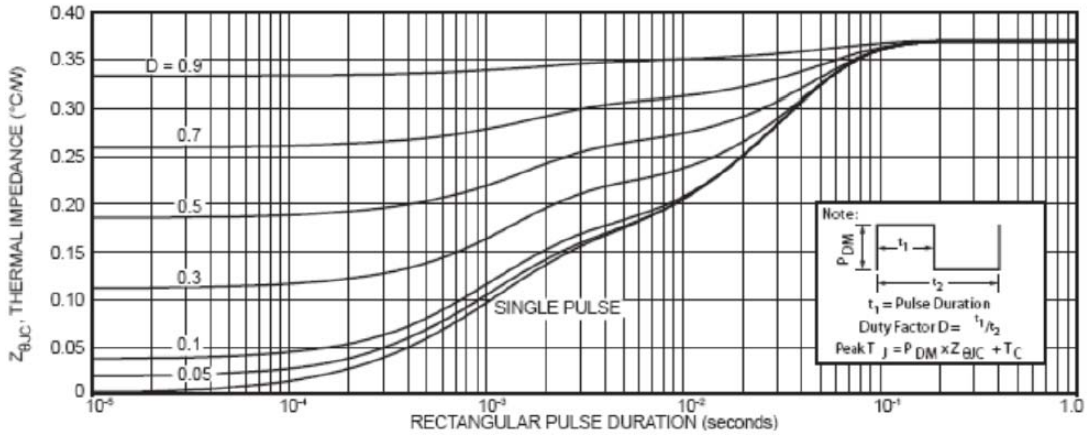


Figure 11. Maximum Effective Transient Thermal Impedance, Junction-to-Case



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