Elektronische Bauelemente

SDF920NE

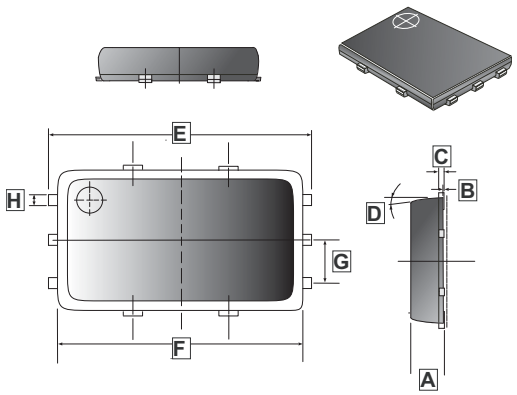
11A, 20V, $R_{DS(ON)}$ 22 mΩ
Dual N-Ch Enhancement Mode Power MOSFET

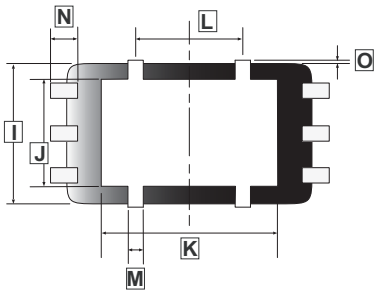
RoHS Compliant Product
A suffix of "-C" specifies halogen & lead-free

DESCRIPTION

These miniature surface mount MOSFETs utilize a high cell density trench process to provide low $R_{DS(on)}$ and to ensure minimal power loss and heat dissipation. Typical applications are DC-DC converters and power management in portable and battery-powered products such as computers,. printers, PCMCIA cards, cellular and cordless telephones

DFN2x5





REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	0.70	0.80	I	2.00 BSC	
B	0.00	0.06	J	1.30	1.55
C	0.10	0.20	K	2.60	2.86
D	0°	12°	L	1.67 BSC	
E	5.00 BSC		M	0.15 BSC	
F	4.50 BSC		N	0.40	0.60
G	0.50 BSC		O	0.00	0.10
H	0.20	0.30			

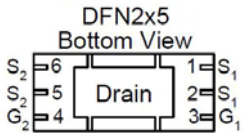
FEATURES

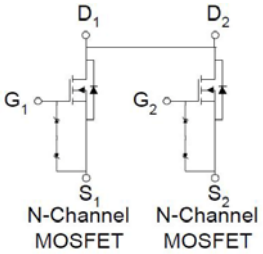
- Low $R_{DS(on)}$ provides higher efficiency and extends battery life.
- Low thermal impedance copper leadframe DFN2x5 saves board space
- Fast switching speed
- High performance trench technology

PACKAGE INFORMATION

Package	MPQ	Leader Size
DFN2x5	5K	13' inch

ESD Protected
2KV





MAXIMUM RATINGS (T_A = 25°C unless otherwise specified)

Parameter		Symbol	Value	Unit
Drain-Source Voltage		V_{DS}	20	V
Gate-Source Voltage		V_{GS}	±12	V
Continuous Drain Current [1]	T_A = 25°C	I_D	11	A
	T_A = 70°C		8.5	A
Pulsed Drain Current [2]		I_{DM}	±40	A
Continuous Source Current (Diode Conduction) [1]		I_S	3.1	A
Total Power Dissipation [1]	T_A = 25°C	P_D	3.5	W
	T_A = 70°C		1.8	W
Operating Junction & Storage Temperature Range		T_J, T_{STG}	-55~150	°C
Thermal Resistance Ratings				
Maximum Junction-to-Ambient [1]	t≦10 sec	$R_{\theta JA}$	36	°C / W
	Steady State		76	°C / W

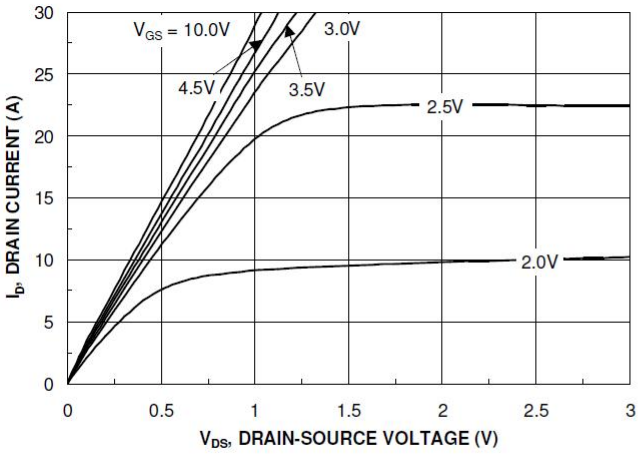
Notes
1. Surface Mounted on 1" x 1" FR4 Board.
2. Pulse width limited by maximum junction temperature.

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise specified)

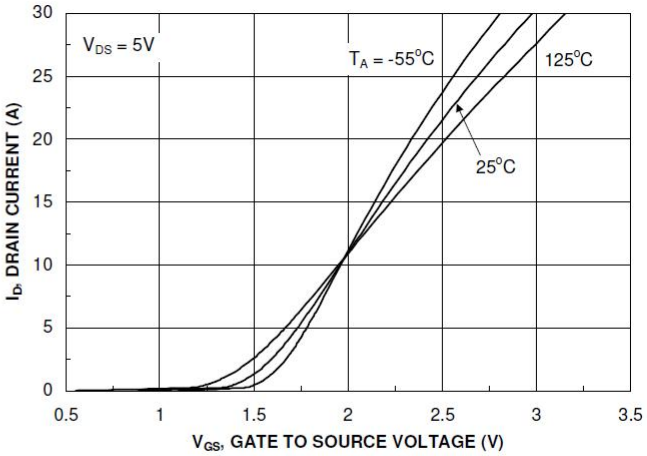
Parameter	Symbol	Min.	Typ.	Max.	Unit	Teat Condition
Static						
Gate Threshold Voltage	$V_{GS(th)}$	0.5	-	-	V	V_{DS}=V_{GS}, I_D=250μA
Gate-Body Leakage Current	I_{GSS}	-	-	±10	μA	V_{DS}=0, V_{GS}= ±12V
Zero Gate Voltage Drain Current	I_{DSS}	-	-	1	μA	V_{DS}=16V, V_{GS}=0
		-	-	30		V_{DS}=16V, V_{GS}=0, T_J=55°C
On-State Drain Current [1]	$I_{D(on)}$	20	-	-	A	V_{DS}=5V, V_{GS}=4.5V
Drain-Source On-Resistance [1]	$R_{DS(ON)}$	10	18	22	mΩ	V_{GS}=4.5V, I_D=6.7A
		10.5	19	23		V_{GS}=4V, I_D=5.6A
		11	23	28		V_{GS}=2.5V, I_D=4.5A
Forward Transconductance [1]	g_{fs}	-	22	-	S	V_{DS}=15V, I_D=6A
Diode Forward Voltage	V_{SD}	-	0.7	-	V	I_S=0.5A, V_{GS}=0
Dynamic [2]						
Total Gate Charge	Q_g	-	9.2	-	nC	I_D=6A, V_{DS}=10V, V_{GS}=4.5V
Gate-Source Charge	Q_{gs}	-	1.9	-		
Gate-Drain Charge	Q_{gd}	-	2.8	-		
Turn-On Delay Time	$T_{d(on)}$	-	1.7	-	nS	V_{DD}=10V, V_{GEN}=4.5V I_D=1A, R_L=15Ω
Rise Time	T_r	-	2.3	-		
Turn-Off Delay Time	$T_{d(off)}$	-	1.1	-		
Fall Time	T_f	-	4.4	-		

Notes
1. Pulse test：PW ≦ 300μs duty cycle ≦ 2%.
2. Guaranteed by design, not subject to production testing.

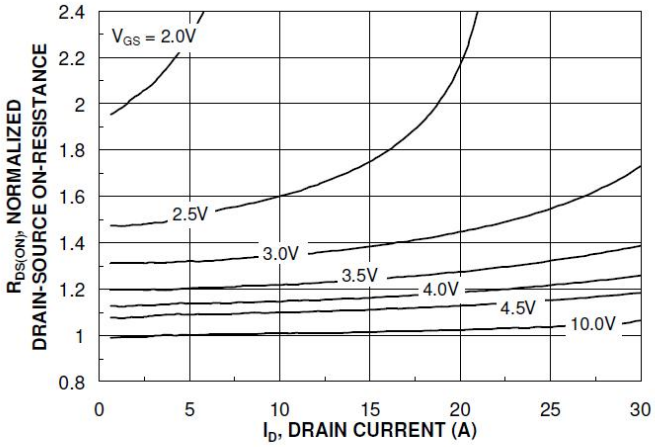
RATINGS AND CHARACTERISTIC CURVES



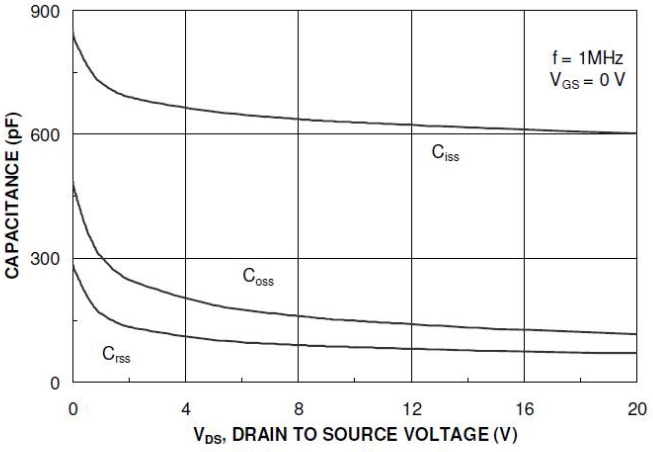
Output Characteristics



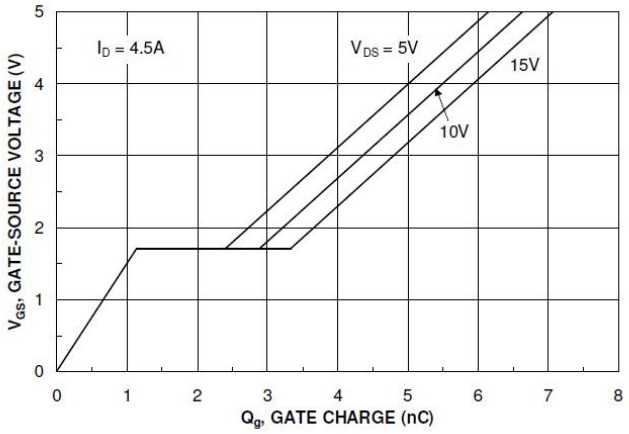
Transfer Characteristics



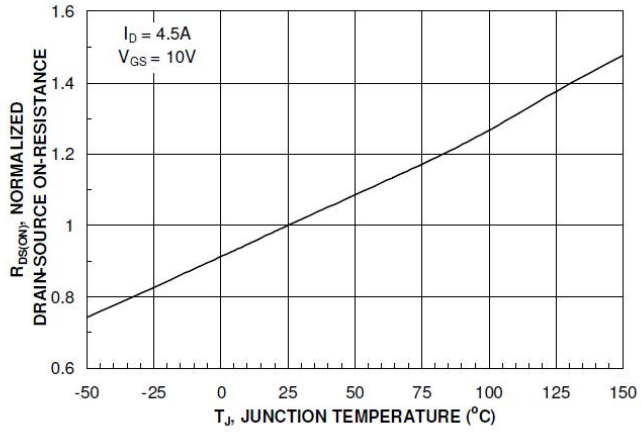
On-Resistance vs. Drain Current



Capacitance



Gate Charge



On-Resistance vs. Junction Temperature

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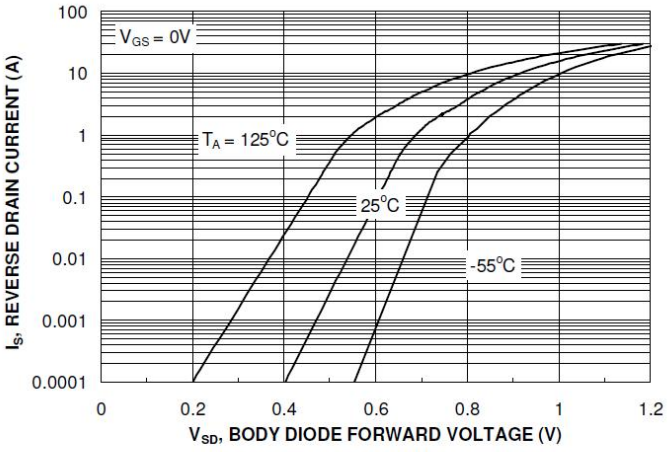
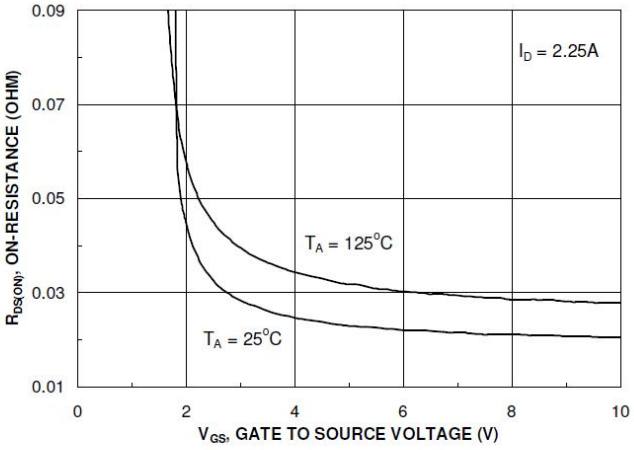
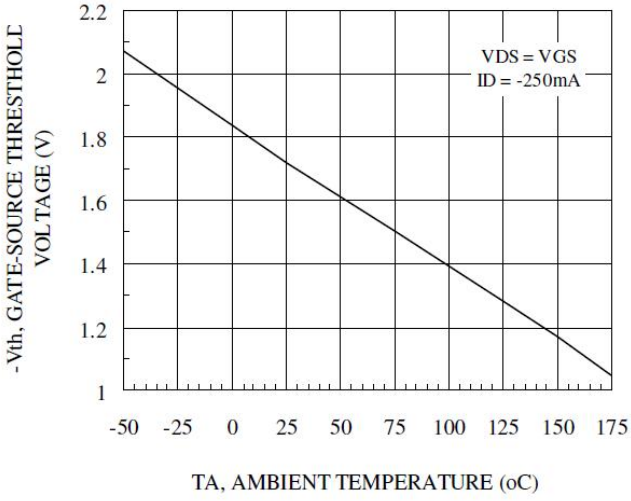


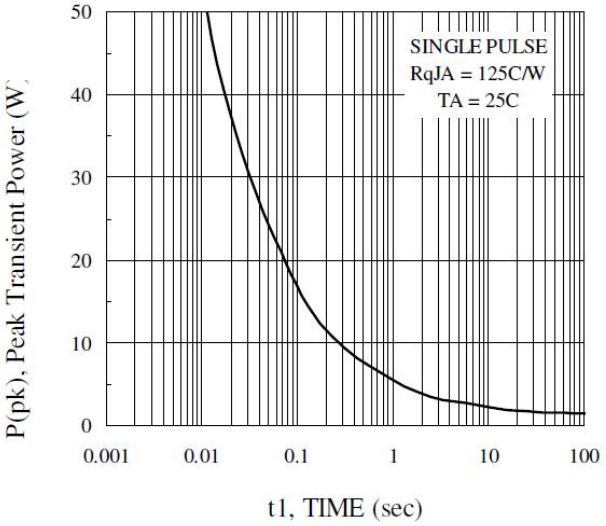
Source-Drain Diode Forward Voltage



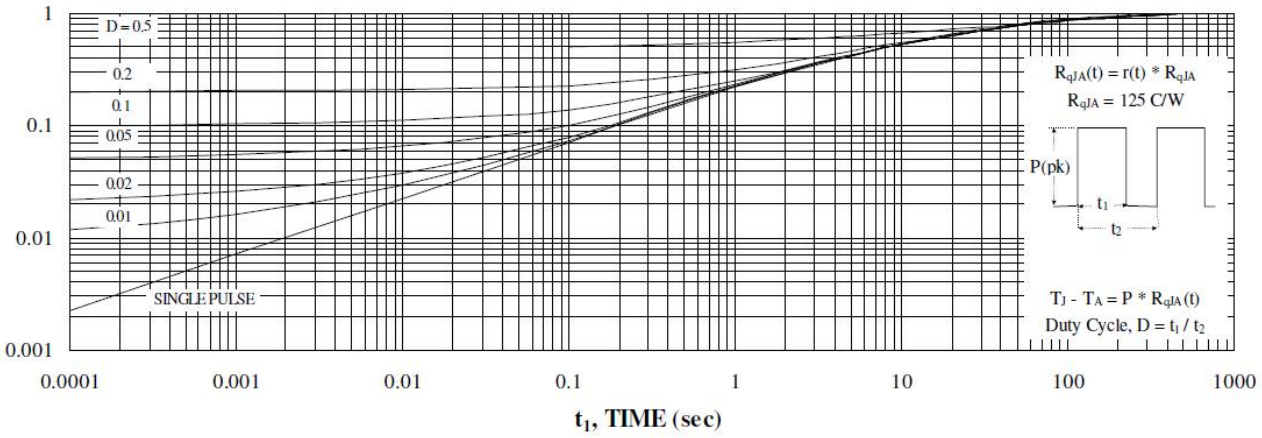
On-Resistance vs. Gate-to-Source Voltage



Vth Gate to Source Voltage Vs Temperature



Single Pulse Power, Junction-to-Ambient



Normalized Thermal Transient Junction to Ambient