Elektronische Bauelemente

SSE90N06-15P

90 A, 60 V, $R_{DS(ON)}$ 10.5 mΩ
N-Channel Enhancement Mode Mos.FET

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

DESCRIPTION

These miniature surface mount MOSFETs utilize 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.

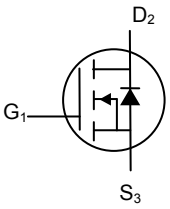
TYPICAL APPLICATIONS

- Low $R_{DS(on)}$ Provides Higher Efficiency and Extends Battery Life.
- Low Thermal impedance copper leadframe TO-220P saves board space.
- Fast Switch speed.
- High performance trench technology.

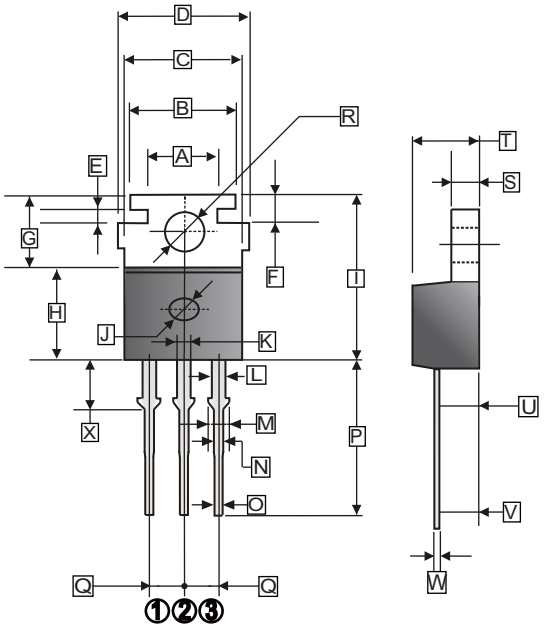
PRODUCT SUMMARY

SSE90N06-15P		
V_{DS}(V)	R_{DS}(on) (mΩ)	I_D(A)
60	10.5@V_{GS}= 10V	90 [1]
	13@V_{GS}= 4.5V	

N-Channel



TO-220P



Dimensions in millimeters

REF.	Millimeter Min.	Millimeter Max.	REF.	Millimeter Min.	Millimeter Max.
A	7.90	8.10	N	0.75	0.95
B	9.45	9.65	O	0.66	0.86
C	9.87	10.47	P	13.50	14.50
D	-	11.50	Q	2.44	3.44
E	1.06	1.46	R	3.50	3.70
F	2.60	3.00	S	1.15	1.45
G	6.30	6.70	T	4.30	4.70
H	8.35	8.75	U	-	2.7
J	1.60 Typ.		V	1.89	3.09
K	1.10	1.30	W	0.40	0.60
L	1.17	1.37	X	2.60	3.60
M	-	1.50			

ABSOLUTE MAXIMUM RATINGS(T_A=25°C UNLESS OTHERWISE NOTED)

Parameter		Symbol	Ratings Maximum	Unit
Drain-Source Voltage		V_{DS}	60	V
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current [1]	T_C= 25°C	I_D	90	A
Pulsed Drain Current [2]		I_{DM}	240	A
Continuous Source Current (Diode Conduction) [a]		I_S	90	A
Power Dissipation [1]	T_C= 25°C	P_D	300	W
Operating Junction and Storage Temperature Range		T_j, T_{stg}	-55 ~ 175	°C

THERMAL RESISTANCE RATINGS			
Parameter	**Symbol**	**Maximum**	**Unit**
Maximum Junction to Ambient [1]	$R_{\theta JA}$	62.5	°C / W
Maximum Junction to Case	$R_{\theta JC}$	0.5	

Notes

1 Package Limited.

2 Pulse width limited by maximum junction temperature.

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

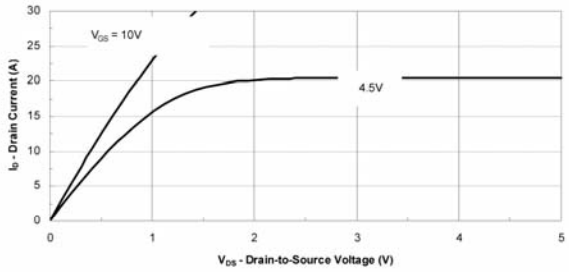
Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Gate-Threshold Voltage	$V_{GS(th)}$	1	-	-	V	V_{DS}=V_{GS}, I_D= 250uA
Gate-Body Leakage	I_{GSS}	-	-	±100	nA	V_{DS}= 0V, V_{GS}= 20V
Zero Gate Voltage Drain Current	I_{DSS}	-	-	1	uA	V_{DS}= 48V, V_{GS}= 0V
		-	-	25		V_{DS}= 48V, V_{GS}= 0V, T_J= 55°C
On-State Drain Current [1]	$I_{D(on)}$	120	-	-	A	V_{DS} = 5V, V_{GS}= 10V
Drain-Source On-Resistance [1]	$R_{DS(ON)}$	-	-	10.5	mΩ	V_{GS}= 10V, I_D= 30A
		-	-	13		V_{GS}= 4.5V, I_D= 20A
Forward Transconductance [1]	g_{fs}	-	30	-	S	V_{DS}= 15V, I_D= 30A
Diode Forward Voltage	V_{SD}	-	1.1	-	V	I_S= 34A, V_{GS}= 0V
DYNAMIC [2]						
Total Gate Charge	Q_g	-	49	100	nC	V_{DS}= 15V, V_{GS}= 4.5V, I_D= 90A
Gate-Source Charge	Q_{gs}	-	9.0	-		
Gate-Drain Charge	Q_{gd}	-	10	-		
Turn-on Delay Time	$T_{d(on)}$	-	16	-	nS	V_{DD}= 25V, V_{GEN}= 10V, R_L= 25Ω, I_D= 34A
Rise Time	T_r	-	10	-		
Turn-off Delay Time	$T_{d(off)}$	-	50	-		
Fall Time	T_f	-	23	-		
Input Capacitance	C_{iss}	-	1850	-	pF	V_{DS}= 15V, V_{GS}= 0V, f= 1MHz
Output Capacitance	C_{oss}	-	290	-		
Reverse Transfer Capacitance	C_{rss}	-	100	-		

Notes

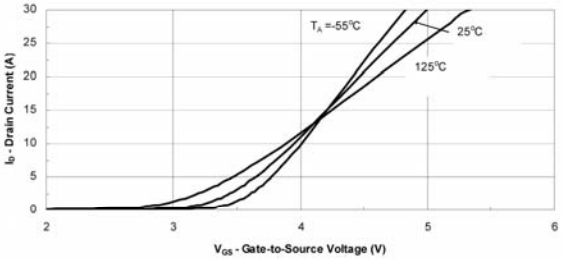
1 Pulse test：PW ≦ 300 us duty cycle ≦ 2%.

2 Guaranteed by design, not subject to production testing.

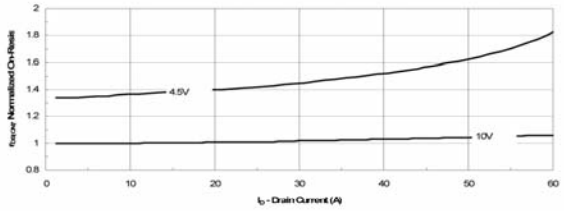
CHARACTERISTIC CURVES



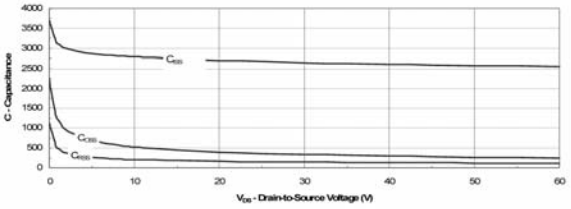
Output Characteristics



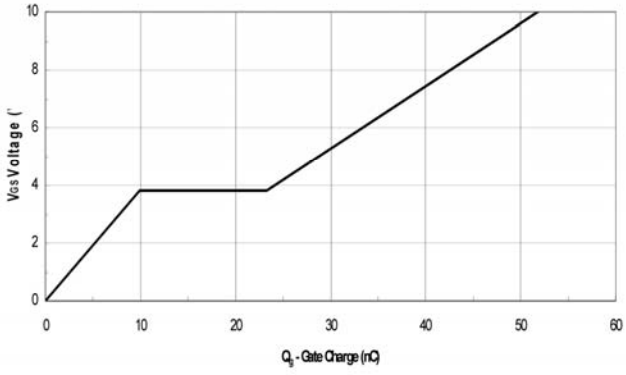
Transfer Characteristics



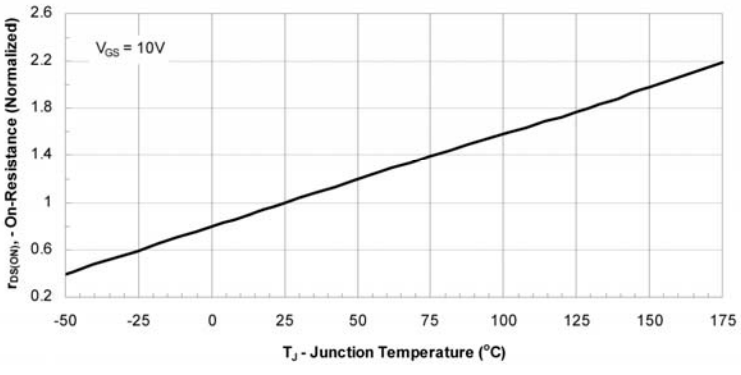
On-Resistance vs. Drain Current



Capacitance

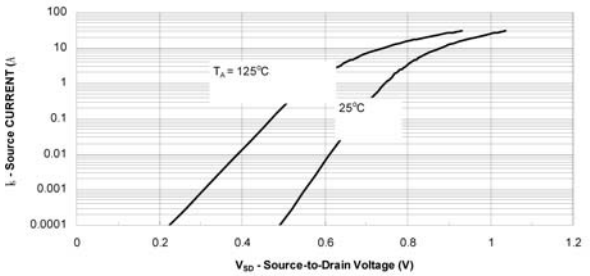


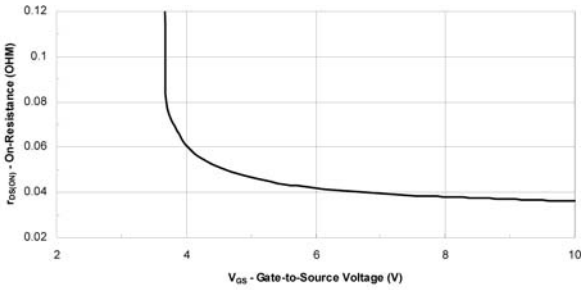
Gate Charge



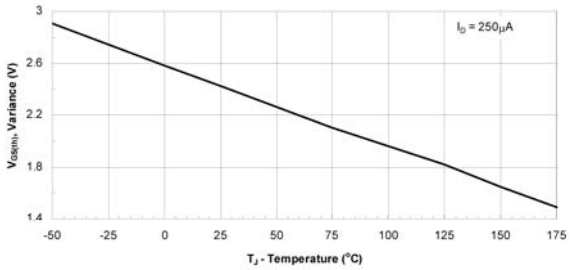
On-Resistance vs. Junction Temperature

CHARACTERISTIC CURVES

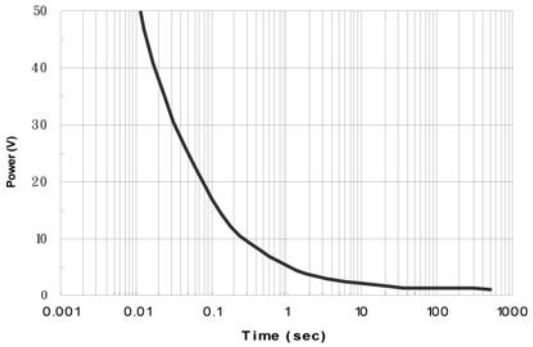




Source-Drain Diode Forward Voltage

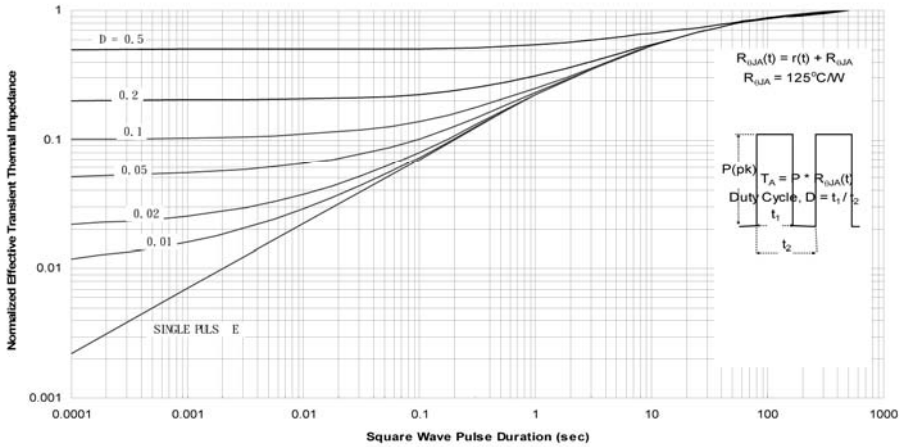


On-Resistance vs.Gate-to Source Voltage



Threshold Voltage

Single Pulse Power



Normalized Thermal Transient Impedance, Junction-to-Ambient