

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

FEATURES

- Easy to use/drive
- Ultra Low On-Resistance
- Green Device Available

TO-220

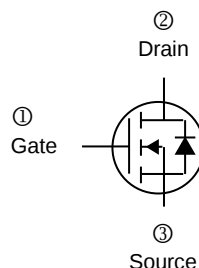


APPLICATION

- DC/DC Converter
- Battery Protection Charge/Discharge
- Load switch
- Synchronous Rectification

ORDER INFORMATION

Part Number	Type
SSE80N06E-C	Lead (Pb)-free and Halogen-free



ABSOLUTE MAXIMUM RATINGS

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	60	V
Gate-Source Voltage		V_{GS}	± 20	V
Continuous Drain Current	$T_C=25^\circ C$	I_D	80	A
	$T_C=100^\circ C$		51	
Pulsed Drain Current		I_{DM}	320	A
Power Dissipation	$T_C=25^\circ C$	P_D	83	W
Operating Junction & Storage Temperature		T_J, T_{STG}	-55~150	$^\circ C$
Thermal Resistance Rating				
Thermal Resistance Junction-Ambient		$R_{\theta JA}$	62	$^\circ C/W$
Thermal Resistance Junction-Case		$R_{\theta JC}$	1.5	

ELECTRICAL CHARACTERISTICS ($T_J=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	60	-	-	V	$V_{GS}=0V, I_D=250\mu A$
Gate-Threshold Voltage	$V_{GS(th)}$	2	-	4	V	$V_{DS}=V_{GS}, I_D=250\mu A$
Gate-Source Leakage Current	I_{GSS}	-	-	± 100	nA	$V_{GS}=\pm 20V, V_{DS}=0V$
Drain-Source Leakage Current	I_{DSS}	-	-	1	μA	$V_{DS}=60V, V_{GS}=0V$
Static Drain-Source On-Resistance	$R_{DS(ON)}$	-	-	6.5	m Ω	$V_{GS}=10V, I_D=50A$
Gate Resistance	R_g	-	1.35	-	Ω	$V_{DS}=0V, f=1MHz$
Total Gate Charge	Q_g	-	76	-	nC	$V_{DS}=30V$ $V_{GS}=10V$ $I_D=20A$
Gate-Source Charge	Q_{gs}	-	17	-		
Gate-Drain Change	Q_{gd}	-	19	-		
Turn-on Delay Time	$T_{d(on)}$	-	19	-	nS	$V_{DS}=30V$ $V_{GS}=10V$ $I_D=20A$ $R_G=3\Omega$
Rise Time	T_r	-	42	-		
Turn-off Delay Time	$T_{d(off)}$	-	48	-		
Fall Time	T_f	-	29	-		
Input Capacitance	C_{iss}	-	4009	-	pF	$V_{DS}=30V$ $V_{GS}=0V$ $f=1MHz$
Output Capacitance	C_{oss}	-	243	-		
Reverse Transfer Capacitance	C_{rss}	-	201	-		
Source-Drain Diode						
Diode Forward Voltage	V_{SD}	-	-	1.2	V	$I_S=20A, V_{GS}=0V$
Reverse Recovery Time	T_{rr}	-	28	-	ns	$I_S=20A, dI/dt=100A/\mu s,$
Reverse Recovery Charge	Q_{rr}	-	52	-	nC	

CHARACTERISTIC CURVES

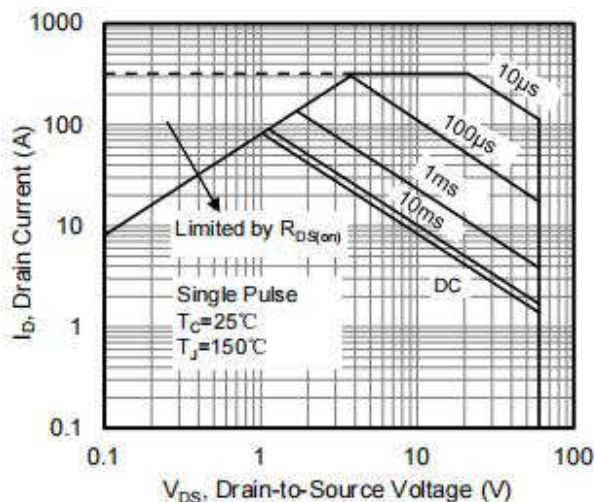


Figure 1. Maximum Safe Operating Area

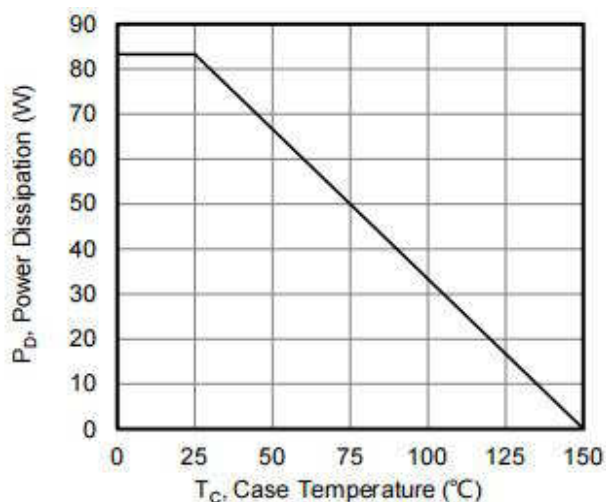


Figure 2. Maximum Power Dissipation vs Case Temperature

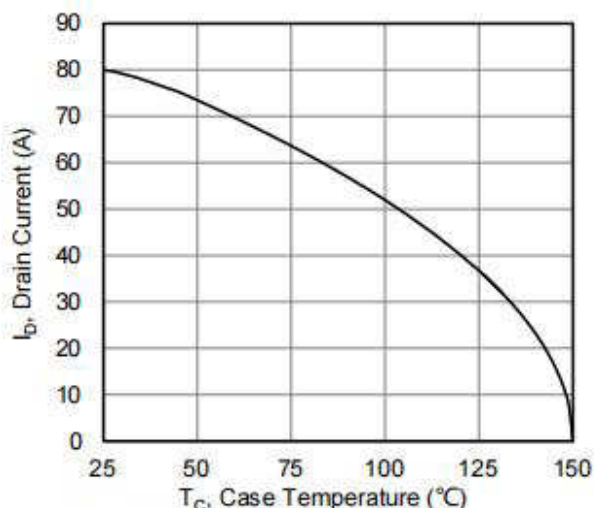


Figure 3. Maximum Continuous Drain Current vs Case Temperature

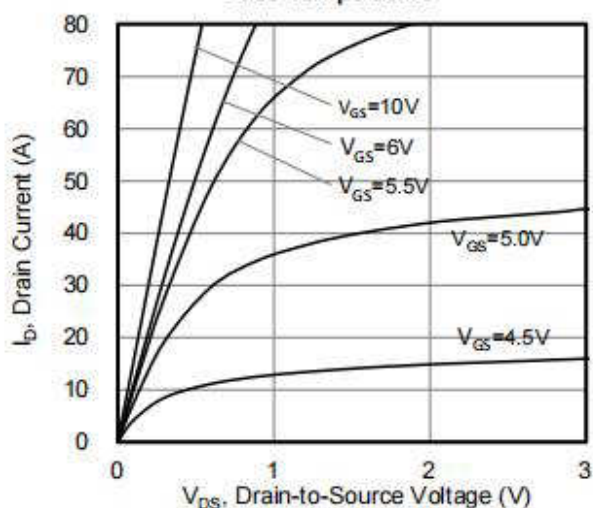


Figure 4. Typical output Characteristics

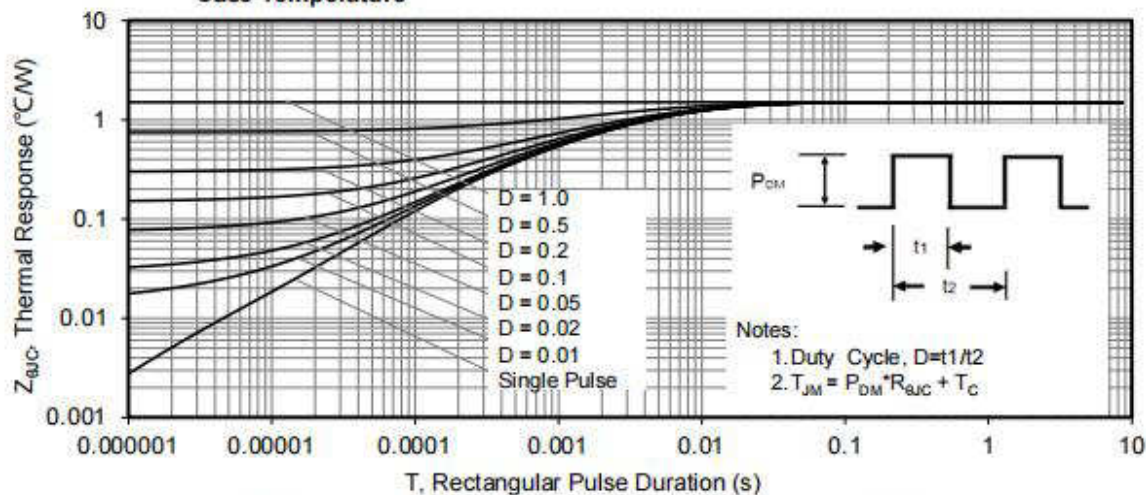


Figure 5. Maximum Effective Thermal Impedance, Junction to Case

CHARACTERISTIC CURVES

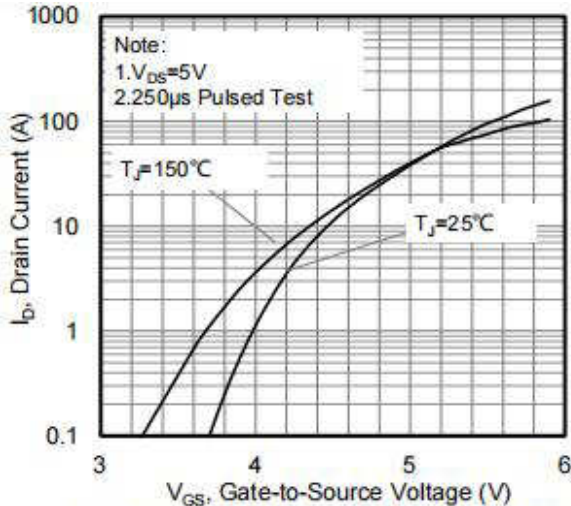


Figure 6. Typical Transfer Characteristics

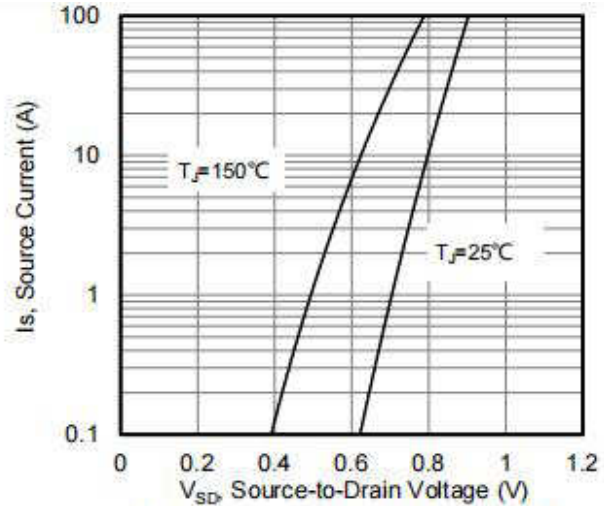


Figure 7. Typical Body Diode Transfer Characteristics

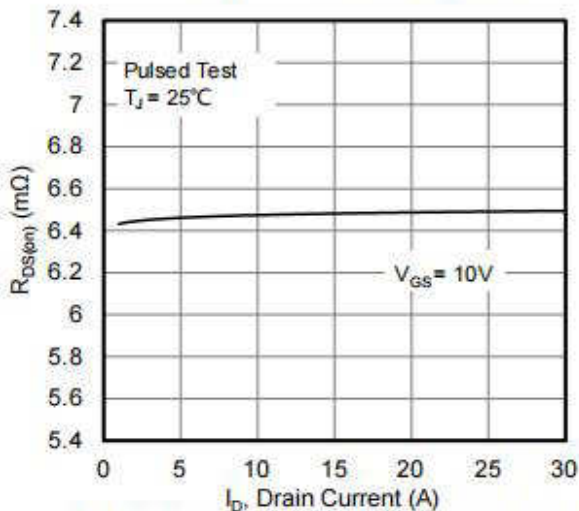


Figure 8. Drain-to-Source On Resistance vs. Drain Current

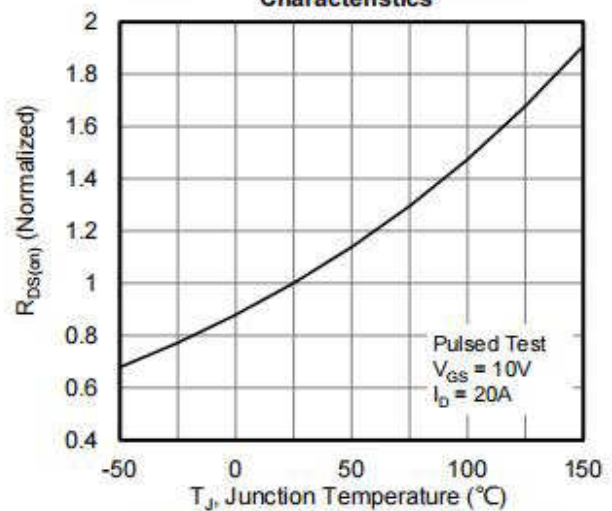


Figure 9. Normalized On Resistance vs. Junction Temperature

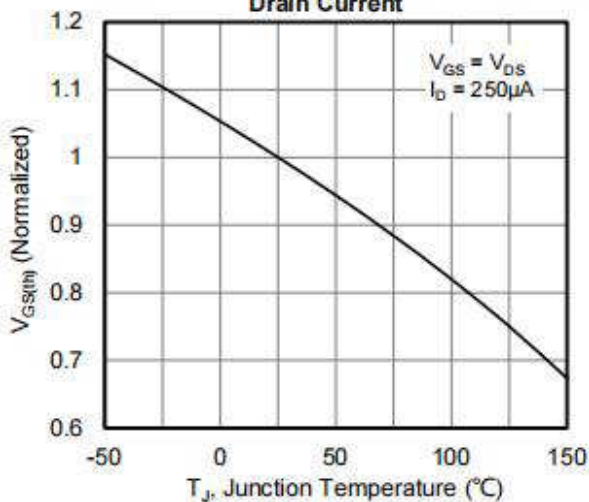


Figure 10. Normalized Threshold Voltage vs. Junction Temperature

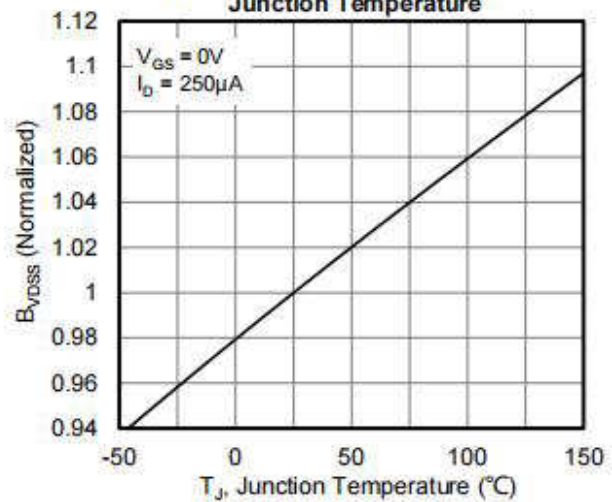


Figure 11. Normalized Breakdown Voltage vs. Junction Temperature

CHARACTERISTIC CURVES

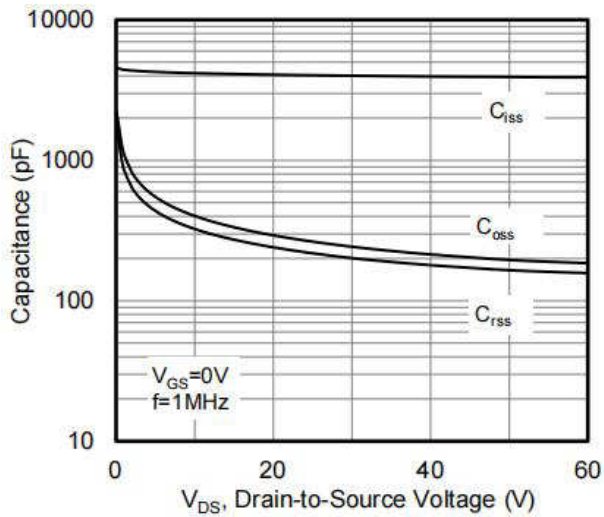


Figure 12. Capacitance Characteristics

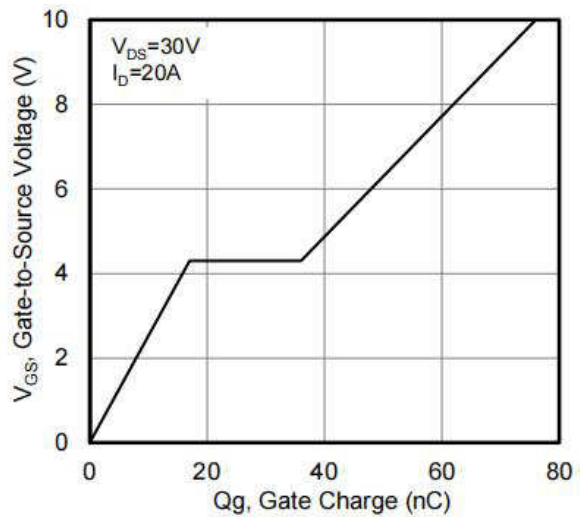
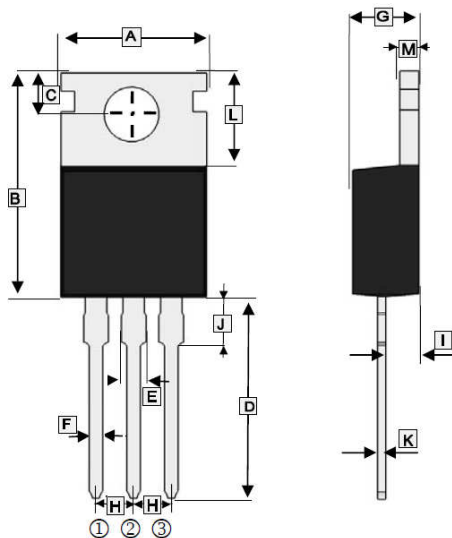


Figure 13. Typical Gate Charge vs Gate to Source Voltage

PACKAGE OUTLINE DIMENSIONS

TO-220



REF.	Millimeter	
	Min.	Max.
A	9.70	10.60
B	14.22	16.50
C	2.40	3.40
D	12.70	14.70
E	1.17	1.78
F	0.40	1.00
G	3.60	4.82
H	2.54 TYP.	
I	2.03	2.92
J	2.70	4.00
K	0.33	0.65
L	5.50	7.00
M	1.15	1.40