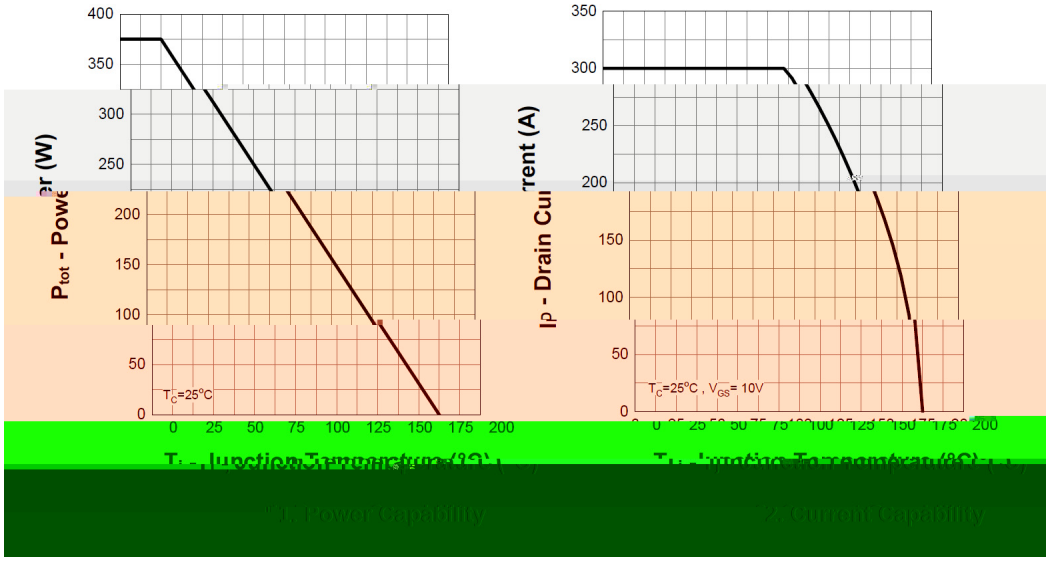
Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	40	V
Gate-Source Voltage	V_{GS}	±20	V
Drain Current	I_D(Tc=25)	300	A
	I_D(Tc=100)	300	A
Drain Current – Pulsed	I_{DM}(Tc=25)	1200	A
Power Dissipation	P_D(Tc=25)	375	W
Operating and Storage Temperature Range	T_J,T_{stg}	-55 to 175	
Diode Forward Current	I_S(Tc=25)	300	A
Single Pulsed Avalanche Energy(V_{DD}=40V,L=1.0mH)	E_{AS}	1512	mJ
Thermal resistance, junction – ambient	$R_{\theta JA}$	60	/ W
Thermal resistance, junction – case	$R_{\theta JC}$	0.4	

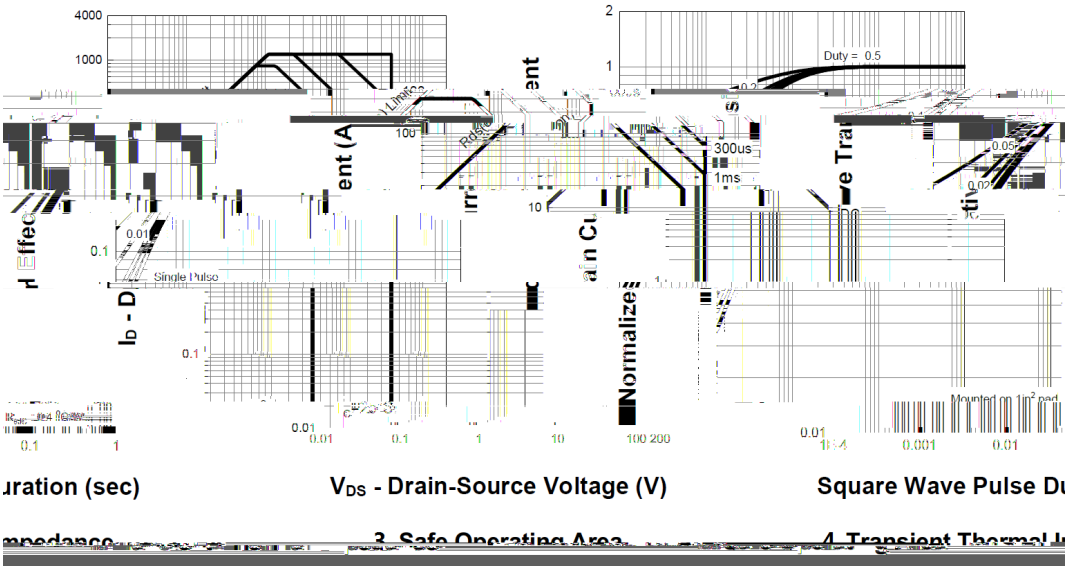
Note:

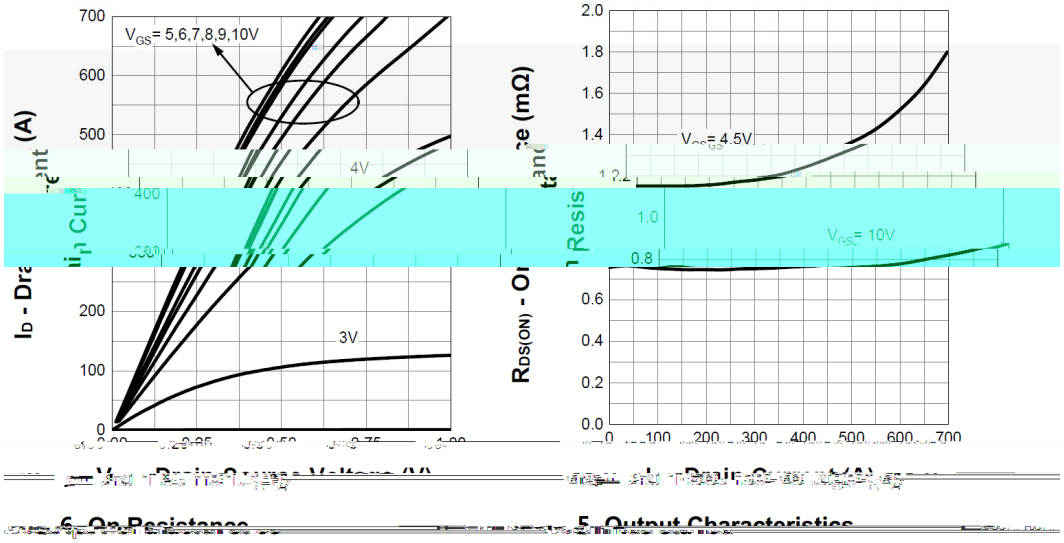
1. Surface Mounted on 1 in^2 pad area, t ≤ 10 sec
2. Pulse width ≤ 300 μs, duty cycle ≤ 2 %
3. limited by bonding wire

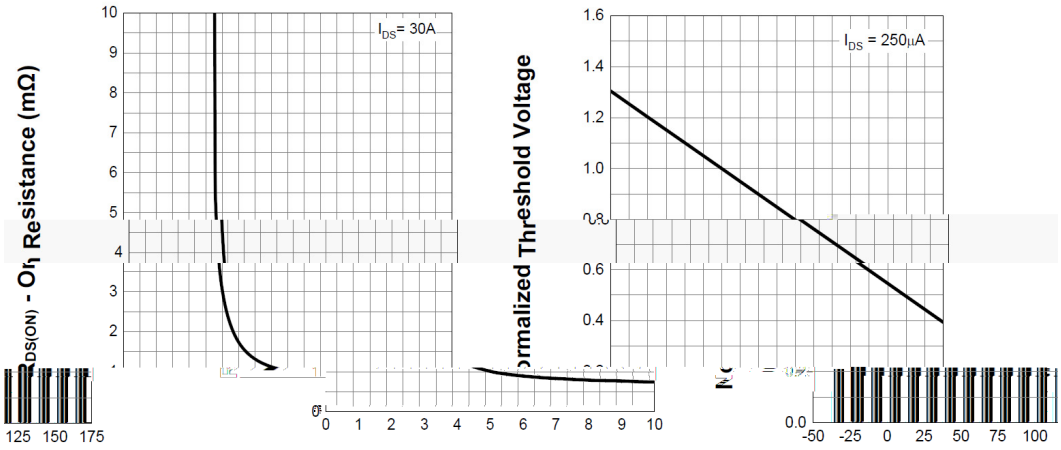
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V I_D=250μA	40			V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS} I_D=250μA	1.0		2.0	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=32V V_{GS}=0V			1	μA
Gate-Body Leakage Current Forward	I_{GSS}	V_{GS}=±20V V_{DS}=0V			±0.1	μA
Static Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS}=10V I_D=30A		0.75	0.85	mΩ
		V_{GS}=4.5V I_D=20A		1.15	1.45	mΩ
Drain-Source Diode Forward Voltage	V_{SD}	V_{GS}=0V I_S=30A			1.3	V
Reverse Recovery Time	t_{rr}	I_{DS} = 30 A, V_{GS} = 0 V dI$_{SD}$/dt = 100 A/μs		33		nS
Reverse Recovery Charge	Q_{rr}			21		nC
Input Capacitance	C_{iss}	V_{DS}=20V V_{GS}=0V f=1.0MHz		14406		pF
Output Capacitance	C_{oss}			1043		
Reverse Transfer Capacitance	C_{rss}			369		

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Turn-On Delay Time	$t_{d(on)}$	V_{GEN}=10V V_{DS}=20V R_L=0.66Ω R_G=3.9Ω I_{DS}=30A		20		ns
Turn-On Rise Time	t_r			76		
Turn-Off Delay Time	$t_{d(off)}$			222		
Turn-Off Fall Time	t_f			105		
Total Gate Charge	Q_g	V_{GS}=10V V_{DS}=20V I_D=30A		263		nC
Gate Source Charge	Q_{gs}			51		
Gate Drain Charge	Q_{gd}			38		


400
350
300
250
200
150
100
50
0
T_C=25°C
0 25 50 75 100 125 150 175 200
P_{tot} - Power (W)
T_C - Junction Temperature(°C)
1. Power Capability
350
300
250
200
150
100
50
0
T_C=25°C , V_{GS}= 10V
I_D - Drain Current (A)
2. Current Capability

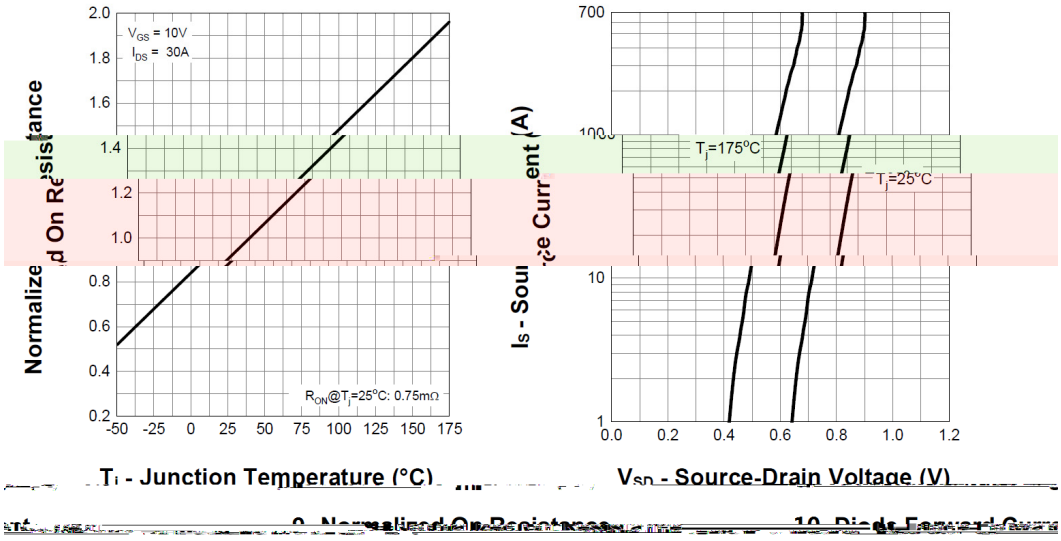

4000
1000
100
10
1
0.1
0.01
Single Pulse
I_D - D
0.01 0.1 1 10 100 200
Duty = 0.5
0.2
0.1
0.05
0.02
300us
1ms
Normalized
Mounted on 1in² pad
0.001 0.01
uration (sec)
V_{DS} - Drain-Source Voltage (V)
Square Wave Pulse Du
3. Safe Operating Area
4. Transient Thermal Ju


700
600
500
400
300
200
100
0
V_{GS}= 5,6,7,8,9,10V
4V
3V
I_D - Dra
2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
V_{GS}= 4.5V
V_{GS}= 10V
$R_{DS(ON)}$ - On
0 100 200 300 400 500 600 700
6. On-Resistance
5. Output Characteristics



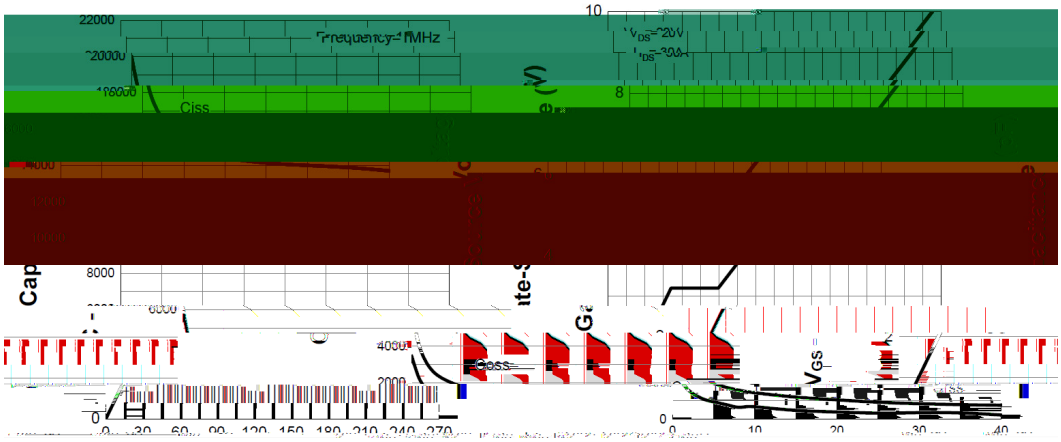
ure (°C) | V_{GS} - Gate-Source Voltage (V) | T_j - Junction Temperatu

d Voltage | 7. Transfer Characteristics | 8. Normalized Threshol



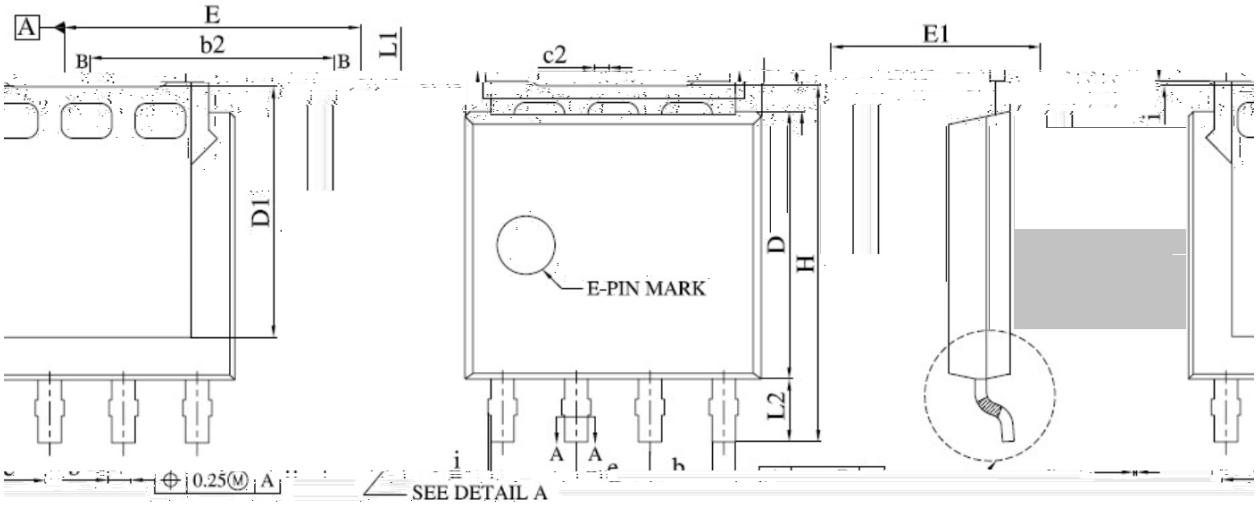
T_j - Junction Temperature (°C) | V_{SD} - Source-Drain Voltage (V)

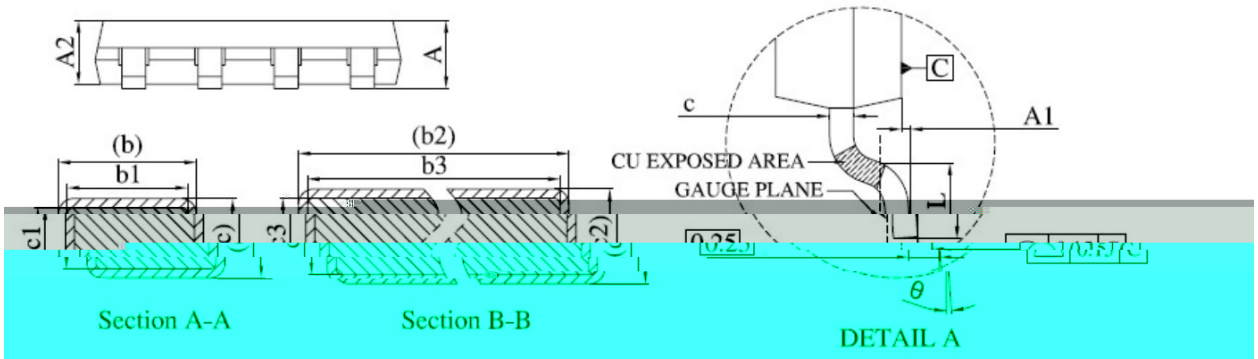
9. Normalized On Resistance | 10. Diode Forward Curre



urce Voltage (V) | Q_G - Gate Charge (nC) | V_{DS} - Drain-So

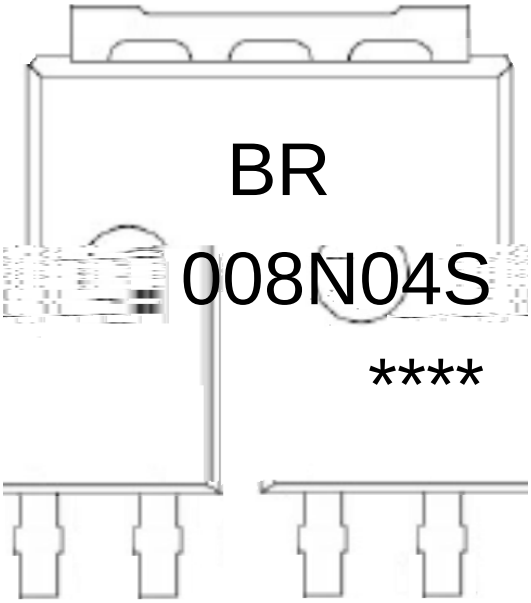
acitance | 12. Gate Charge | 11. Capa





Symbol	Dimensions In Millimeters	
	MIN	MAX
A	1.00	1.30

Symbol	Dimensions In Millimeter	
	MIN	MAX
E	4.95	5.30



008N04S

Note

BR:	Company Code
008N04S:	Product Type Code
****:	Lot No. Code, code change with Lot No.