

/ Absolute Maximum Ratings(Ta=25)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	40	V
Drain Current ^{①③}	$I_D(T_C=25^{\circ}C)$	325	A
	$I_D(T_C=100^{\circ}C)$	325	A
Pulsed Drain Current ^{①②}	I_{DM}	1300	A
Gate-Source Voltage	V_{GS}	± 20	V
Single Pulsed Avalanche Energy L=1.0mH	E_{AS}	1250	mJ
Continuous-Source Current	$I_S(T_C=25^{\circ}C)$	300	A
Total Power Dissipation ^①	$P_D(T_C=25^{\circ}C)$	375	W
Junction and Storage Temperature Range	T_J, T_{STG}	-55 to 175	$^{\circ}C$
Thermal Resistance-Junction to Ambient ^①	$R_{\theta JA}$	60	$^{\circ}C/W$
Thermal Resistance-Junction to Case ^①	$R_{\theta JC}$	0.4	

Notes:

- ① Pulse width $\leq 300 \mu s$, duty cycle $\leq 2\%$
 ② Surface Mounted on 1 in² pad area, $t \leq 10$ sec
 ③ Limited by bonding wire

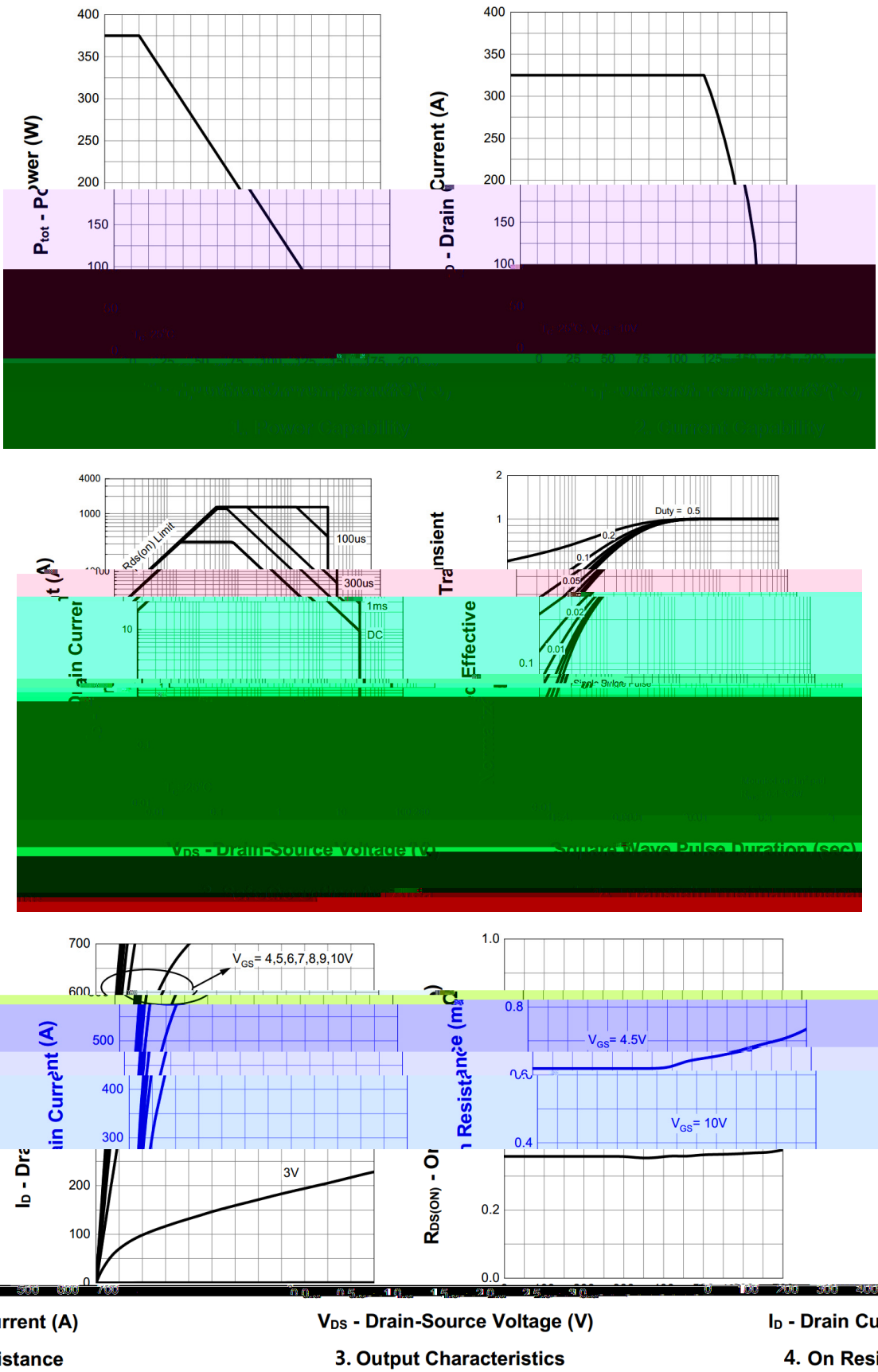
/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V$ $I_D=250\mu A$	40			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=32V$ $V_{GS}=0V$			1	μA
Gate-Body Leakage Current Forward	I_{GSS}	$V_{GS}=\pm 20V$ $V_{DS}=0V$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=250\mu A$	1		2	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V$ $I_D=50A$		0.41	0.46	m Ω
	$R_{DS(on)}$	$V_{GS}=4.5V$ $I_D=30A$		0.65	0.75	m Ω
Drain-Source Diode Forward Voltage	V_{SD}	$V_{GS}=0V$ $I_S=50A$			1.3	V
Reverse Recovery Time	t_{rr}	$I_{DS} = 50A, V_{GS} = 0V$ $dI_{SD}/dt = 100 A/\mu s$		65		nS
Reverse Recovery Charge	Q_{rr}			58		nC
Input Capacitance	C_{iss}	$V_{DS}=20V$ $V_{GS}=0V$ $f=1.0MHz$		8375		pF
Output Capacitance	C_{oss}			2536		
Reverse Transfer Capacitance	C_{rss}			213		

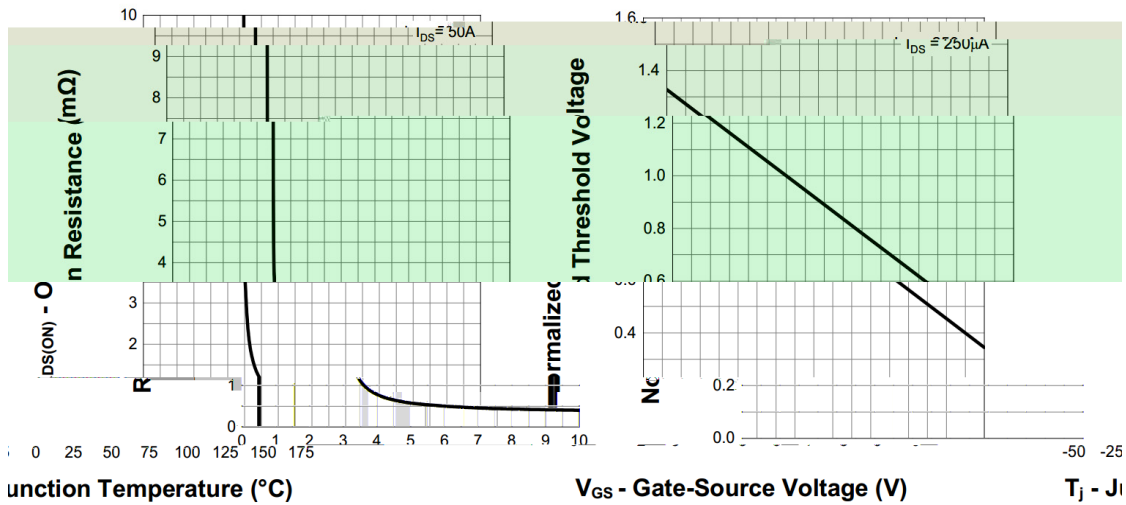
/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Total Gate Charge	Q_g	$V_{GS}=10V, \quad V_{DS}=20V, \\ I_D=50A$		169		nC
Gate Source Charge	Q_{gs}			27		
Gate Drain Charge	Q_{gd}			37		
Turn-On Delay Time	$t_{d(on)}$	$V_{GEN}=10V \quad V_{DS}=20V \\ R_L=0.4\Omega \quad R_G=3.9\Omega \\ I_{DS}=50A$		14		ns
Turn-On Rise Time	t_r			92		
Turn-Off Delay Time	$t_{d(off)}$			178		
Turn-Off Fall Time	t_f			144		

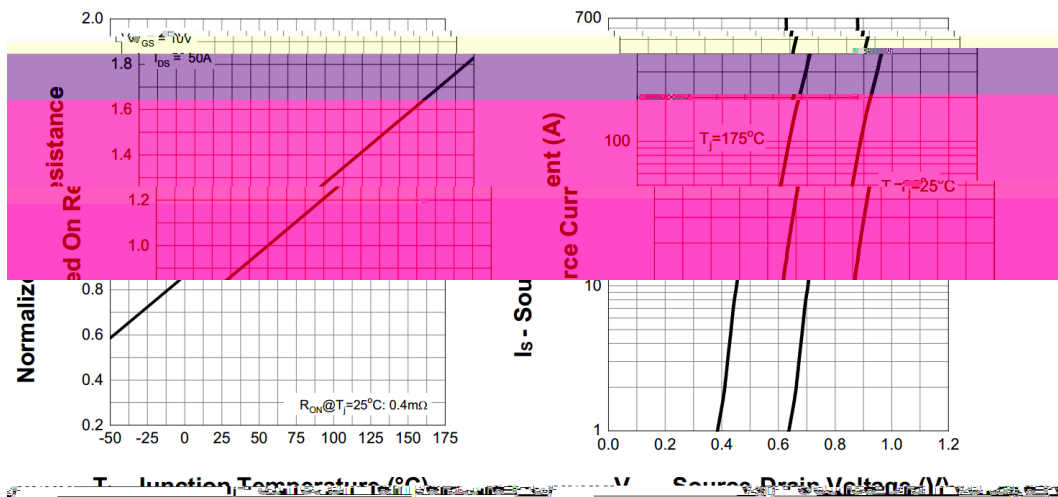
/ Electrical Characteristic Curve



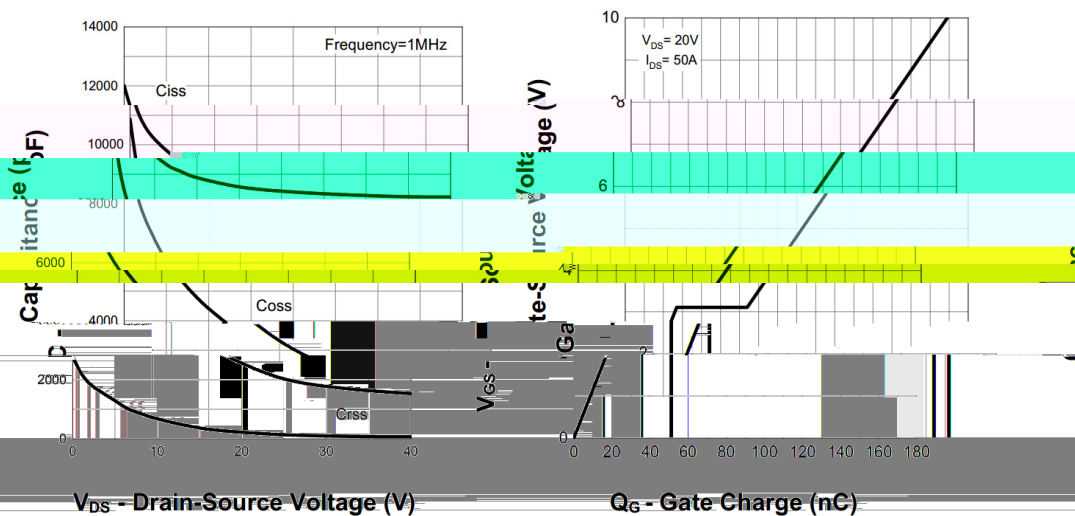
/ Electrical Characteristic Curve



7. Transfer Characteristics



8. Normalized On-Resistance



9. Diode Forward Current

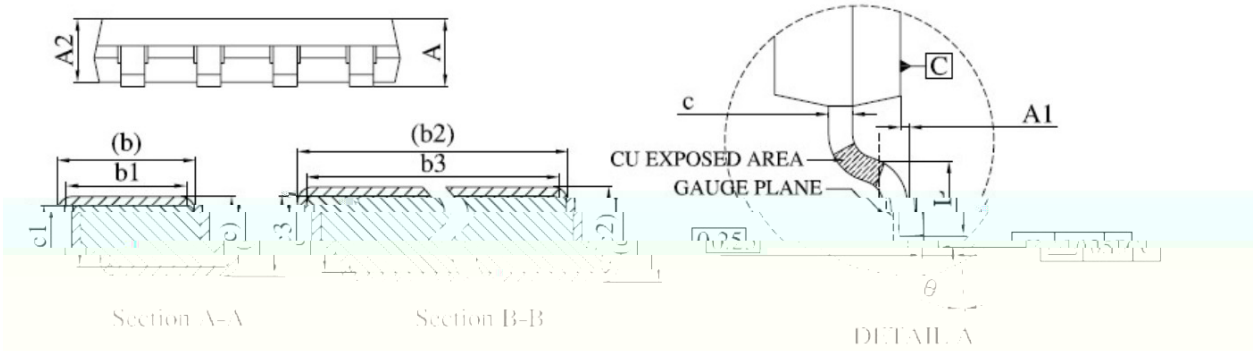
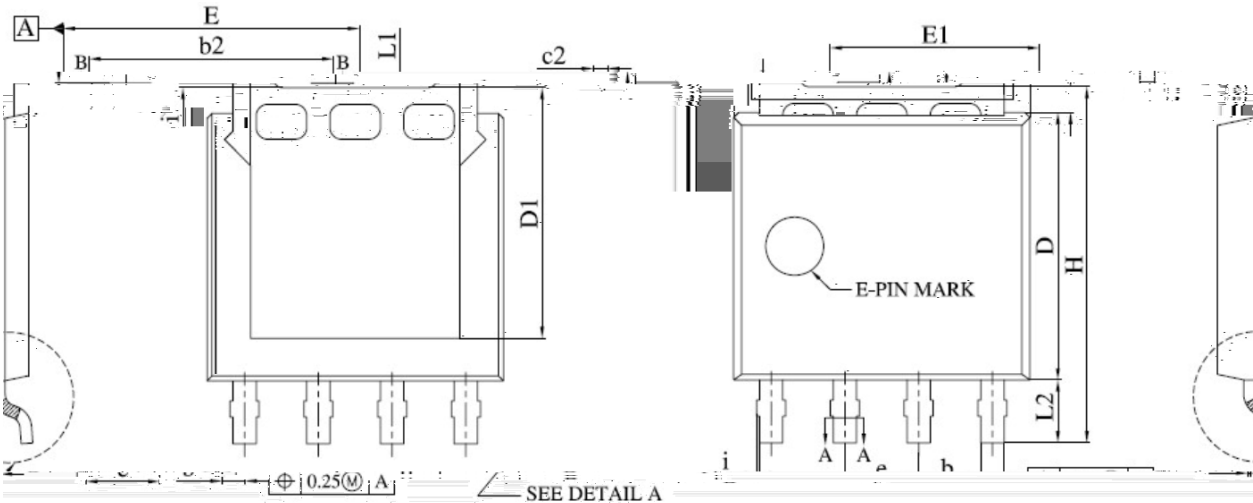


10. Capacitance



11. Gate Charge

/ Package Dimensions



Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeter	
	MIN.	MAX.		MIN.	MAX.
A	1.00	1.30	E	4.95	5.30
A1	0.00	0.15	E1	3.50	3.75
A2	0.98	1.12	e	1.27 BSC.	
b	0.35	0.50	H	5.95	
b1	0.32	0.46	i	-	
b2	4.02	4.41	L	0.40	0.85
b3	4.00	4.37	L1	0.27	0.57
c	0.19	0.25	L2	0.80	1.30
c1	0.17	0.23	θ	0°	8°
c2	0.24	0.30			
c3	0.22	0.28			
D	4.45	4.70			
D1	-	4.45			



/ Marking Instructions



004N04S

Note

BR: Company Code

004N04S: Product Type Code

****: Lot No. Code, code change with Lot No.

() / Temperature Profile for IR Reflow Soldering(Pb-Free)



Note:

- 1

150 180

60 90sec;

1.Preheating:150~180 , Time:60~90sec.
- 2

245 5

5 0.5sec;

2.Peak Temp.:245 5 , Duration:5 0.5sec.
- 3

2 10 /sec.

3. Cooling Speed: 2~10 /sec.

/ Resistance to Soldering Heat Test Conditions

260 5 10 1 sec. Temp.:260±5℃ Time:10±1 sec

/ Packaging SPEC.

/ REEL

Package Type	Units					Dimension (unit mm ³)		
LFPK5×6	3,000	2	6,000	5	30,000	13"×12	356×335×50	385×285×358

Package Type	Units					Dimension (unit mm ³)		
LFPK5×6	5,000	2	10,000	5	50,000	13"×12	356×335×50	385×285×358

/ Notices

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