

/ Revised record

A	2022.8.5		AOS-AOT282L		

/ Descriptions

TO-220 N

N-CHANNEL MOSFET in a TO-220 Plastic Package.

/ Features

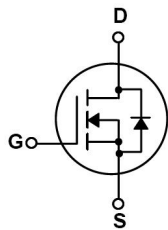
Ultra Low On-Resistance,fast switching.

/ Applications

BMS

BMS appliances, High power inverter system, Power appliances

/ Equivalent Circuit



/ Pinning



PIN1 G PIN 2 4 D PIN 3 S

/ Marking

See Marking Instructions.

/ Absolute Maximum Ratings($T_a=25^\circ\text{C}$)

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	80	V
Drain Current		$I_D(T_c=25^\circ\text{C})$	195	A
Pulsed Drain Current		I_{DM}	400	A
Gate-Source Voltage		V_{GS}	± 20	V
Single Pulsed Avalanche Energy $L=0.5\text{mH}$		E_{AS}	1200	mJ
Avalanche Current		I_{AS}	47.5	A
Total Power Dissipation		$P_D(T_c=25^\circ\text{C})$	227	W
Junction and Storage Temperature Range		T_J, T_{STG}	-55 to 150	$^\circ\text{C}$
Thermal Resistance-Junction to Ambient	$t \leq 10\text{s}$	$R_{\theta JA}$	15	$^\circ\text{C/W}$
	Steady-State		60	
Thermal Resistance-Junction to Case	Steady-State	$R_{\theta JC}$	0.55	

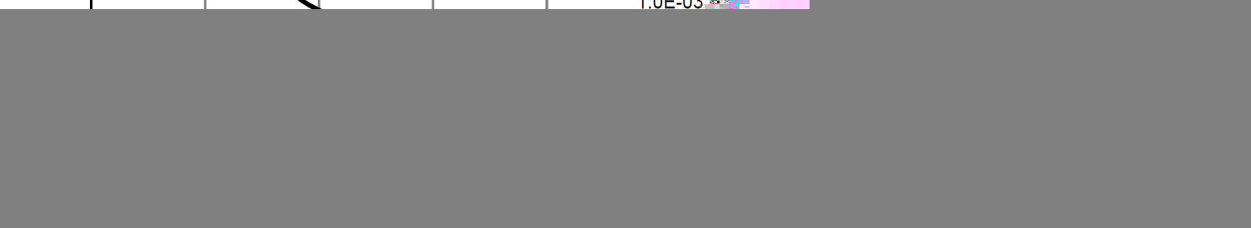
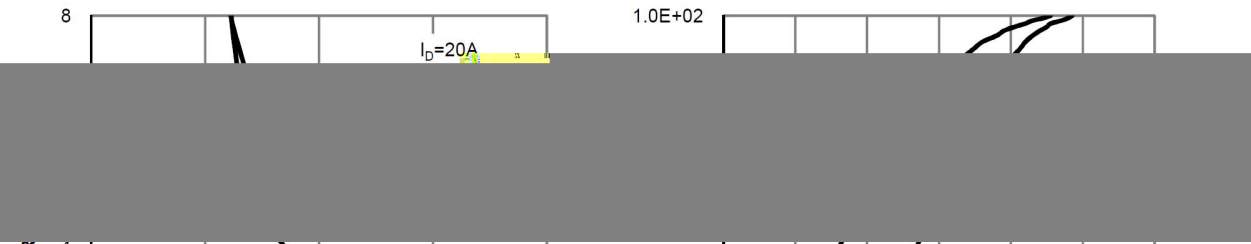
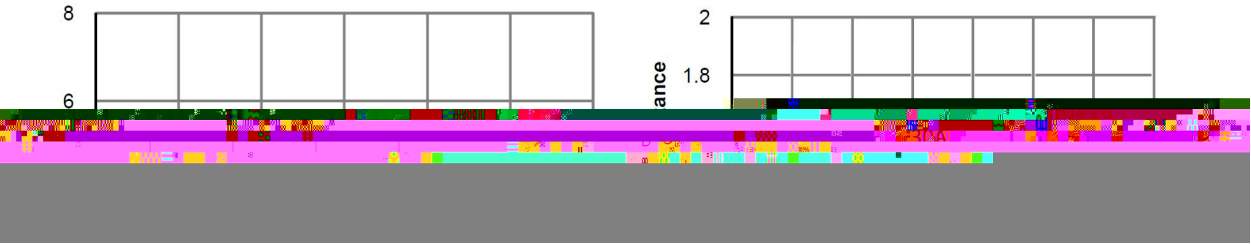
/ Electrical Characteristics($T_a=25^\circ\text{C}$)

Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0\text{V}$	$I_D=250\mu\text{A}$	80	94		V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=80\text{V}$	$V_{GS}=0\text{V}$			1	μA
Gate-Body Leakage Current Forward	I_{GSS}	$V_{GS}=\pm 20\text{V}$	$V_{DS}=0\text{V}$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$	$I_D=250\mu\text{A}$	2	2.9	4	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10\text{V}$	$I_D=30\text{A}$		2.9	3.5	$\text{m}\Omega$
Forward On Voltage	V_{SD}	$V_{GS}=0\text{V}$	$I_S=1\text{A}$			1.2	V
Input Capacitance	C_{iss}	$V_{DS}=25\text{V}$ $f=1\text{MHz}$	$V_{GS}=0\text{V}$		6350		pF
Output Capacitance	C_{oss}				2440		
Reverse Transfer Capacitance	C_{rss}				305		

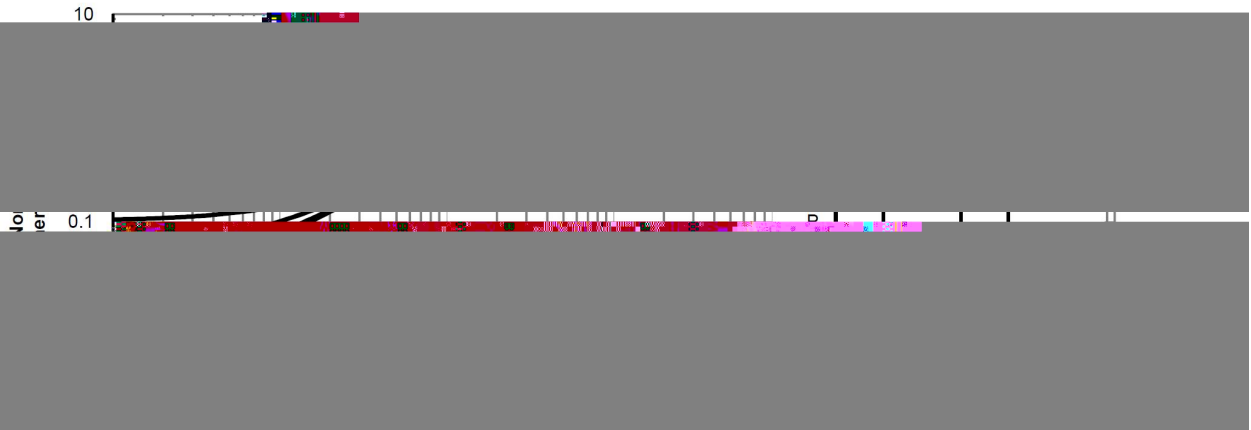
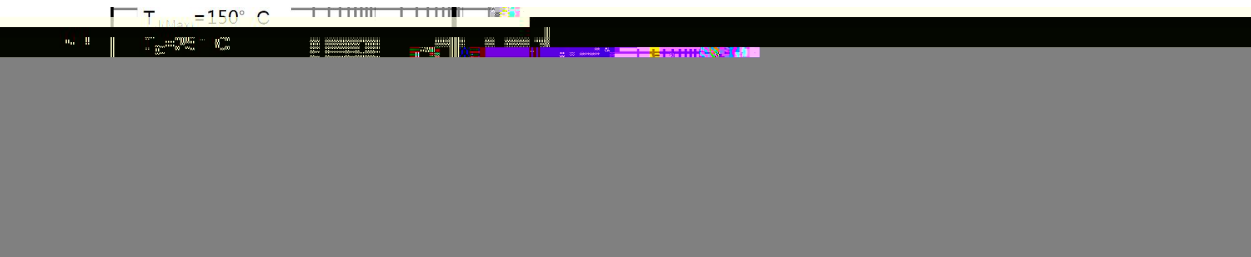
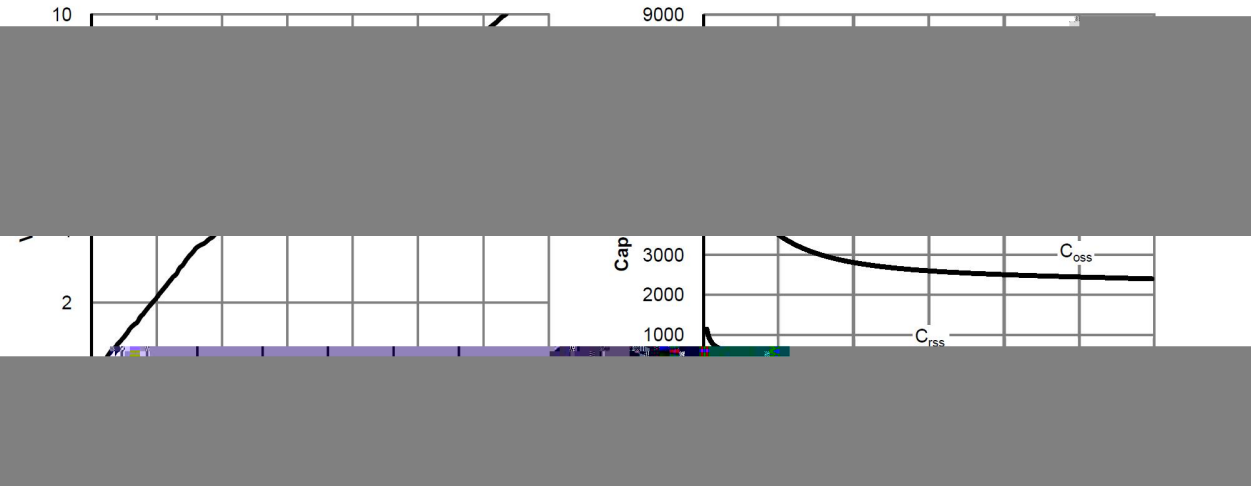
/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Gate resistance	R_g	$f=1\text{MHz}$		1.6		Ω
Total Gate Charge	Q_g	$V_{GS}=10\text{V}$ $V_{DS}=40\text{V}$ $I_D=20\text{A}$		128		nC
Gate Source Charge	Q_{gs}			36		
Gate Drain Charge	Q_{gd}			23		
Turn-On Delay Time	$t_{d(on)}$	$V_{GS}=10\text{V}$ $V_{DS}=40\text{V}$ $R_L=2\Omega$ $R_{GEN}=3\Omega$		25		ns
Turn-On Rise Time	t_r			19		
Turn-Off Delay Time	$t_{d(off)}$			56		
Turn-Off Fall Time	t_f			18		

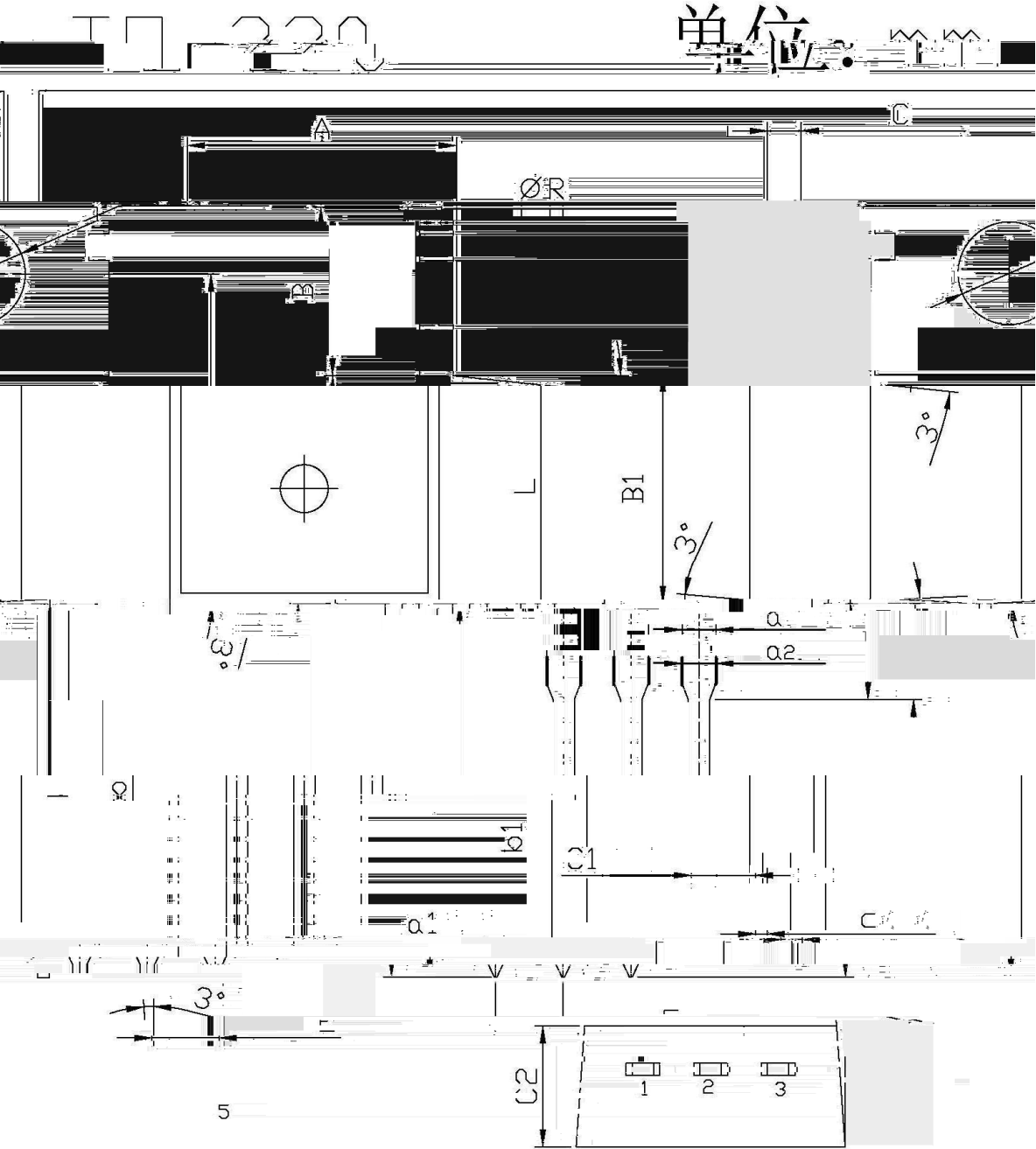
/ Electrical Characteristic Curve



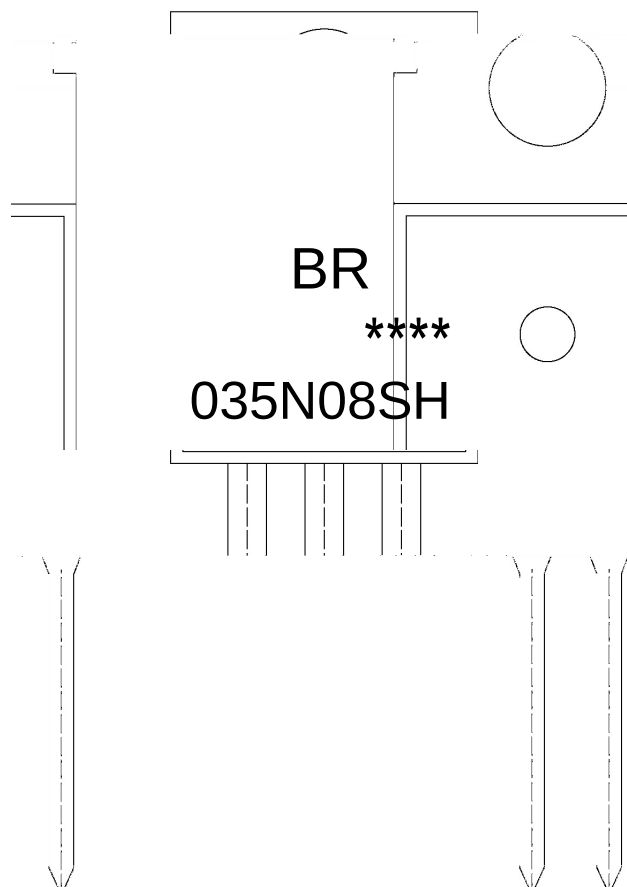
/ Electrical Characteristic Curve



/ Package Dimensions



Dimensions in Millimeters				Dimensions in Millimeters			
Max	Symbol	Min	Symbol	Max	Symbol	Min	Symbol
14.3	A	9.8	B1	10.2	C	1.2	
6.7	R	3.56		3.64	Pb	6.3	
15.7		16.1		9.0		9.4	
12.6		13.6		2.6		2.6	
3.9	n1	9.6	n1	18.6	a1	9.7	
9.6		12.2		13.3		8.4	
14.3		12.5		12.7		1.4	
	a2	12.5		1.45			

/ Marking Instructions

说明：

BR： 为公司代码

035N08SH： 为型号代码

****： 为生产批号代码，随生产批号变化

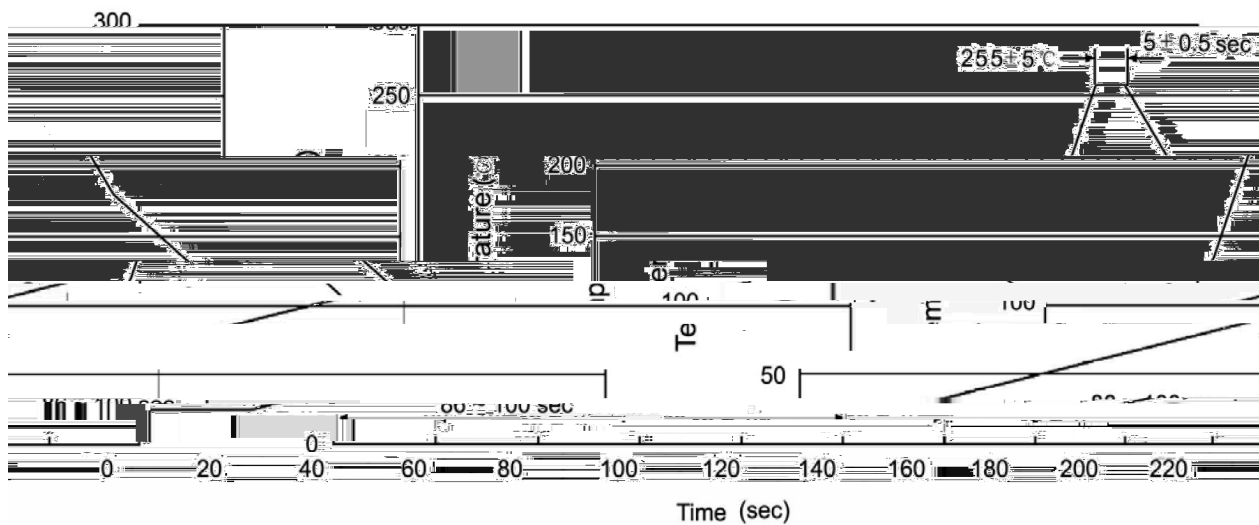
Note:

BR: Company Code

035N08SH: Product Type

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

() / Temperature Profile for Dip Soldering(Pb-Free)



Note:

- | | | | | | |
|---|-------|-----|-----------|--------|--|
| 1 | 25 | 150 | 60 | 90sec; | 1.Preheating:25~150°C, Time:60~90sec. |
| 2 | 255±5 | | 5±0.5sec; | | 2.Peak Temp.:255±5°C, Duration:5±0.5sec. |
| 3 | | 2 | 10°C/sec. | | 3. Cooling Speed: 2~10°C/sec. |

/ Resistance to Soldering Heat Test Conditions

270±5°C 10±1 sec. Temp.:270±5°C Time:10±1 sec

/ Packaging SPEC.

/ BULK

Package Type	Units					Dimension (unit mm ³)		
	Units/Bag 只/袋	Bags/Inner Box 袋/盒	Units/Inner Box 只/盒	Inner Boxes/Outer Box 盒/箱	Units/Outer Box 只/箱	Bag	Inner Box	Outer Box
TO-220/F	200	10	2,000	5	10,000	135×190	237×172×102	560×245×195

/ TUBE

Package Type	Units					Dimension (unit mm ³)		
	Units/Tube 只/套管	Tubes/Inner Box 套管/盒	Units/Inner Box 只/盒	Inner Boxes/Outer Box 盒/箱	Units/Outer Box 只/箱	Tube	Inner Box	Outer Box
TO-220/F	50	20	1,000	5	5,000	532×31.4×5.5	555×164×50	575×290×180

/ Notices