D	2015-11				
E	2022-4-22	1			

AOS-AOD380A60

F 2022.4.21 ALL

/ Descriptions

TO-251 N 650V

N-CHANNEL 650V Super-Junction Power MOSFET in a TO-251Plastic Package.

/ Features

$R_{DS(on)}$ C_{rss}

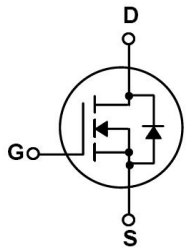
Low $R_{DS(on)}$,low gate charge, low C_{rss}, fast switching,HF Product.

/ Applications

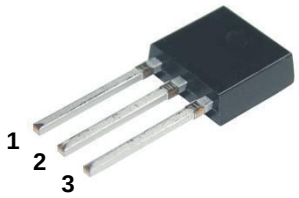
DC/DC

Suited for low voltage applications such as automotive, DC/DC Converters, and high efficiency switching for power management in portable and battery operated products.

/ Equivalent Circuit



/ Pinning



PIN1 G PIN 2 D PIN 3 S

/ Marking

See Marking Instructions.

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DSS}	650	V
Drain Current	I_D(Tc=25℃)	11	A
Drain Current - Pulsed	I_{DM}	44	A
Gate-Source Voltage	V_{GS}	±30	V
Single Pulsed Avalanche Energy	E_{AS}	277	mJ
Avalanche Current	I_{AS}	8	A
Power Dissipation	P_D(Tc=25℃)	125	W
Operating and Storage Temperature Range	T_J,T_{STG}	-55 to 150	℃
Junction-to-Case	$R_{\theta JC}$	1	℃/W
Junction-to-Ambient	$R_{\theta JA}$	55	℃/W

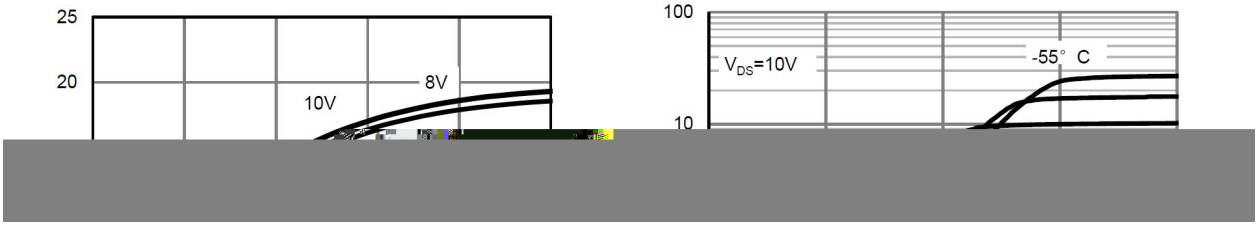
Pin -

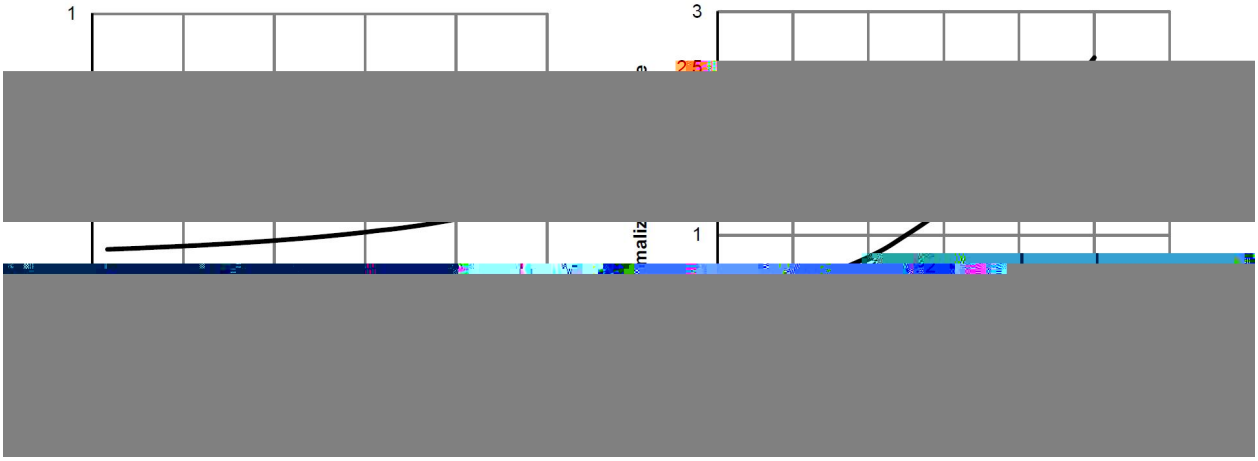
Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V	I_D=250μA	650	700		V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=650V T_J=25℃	V_{GS}=0V			1.0	μA
Gate-Body Leakage Current, Forward	I_{GSS}	V_{GS}=±30V				±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}	I_D=250μA	2.5	3.3	4.5	V

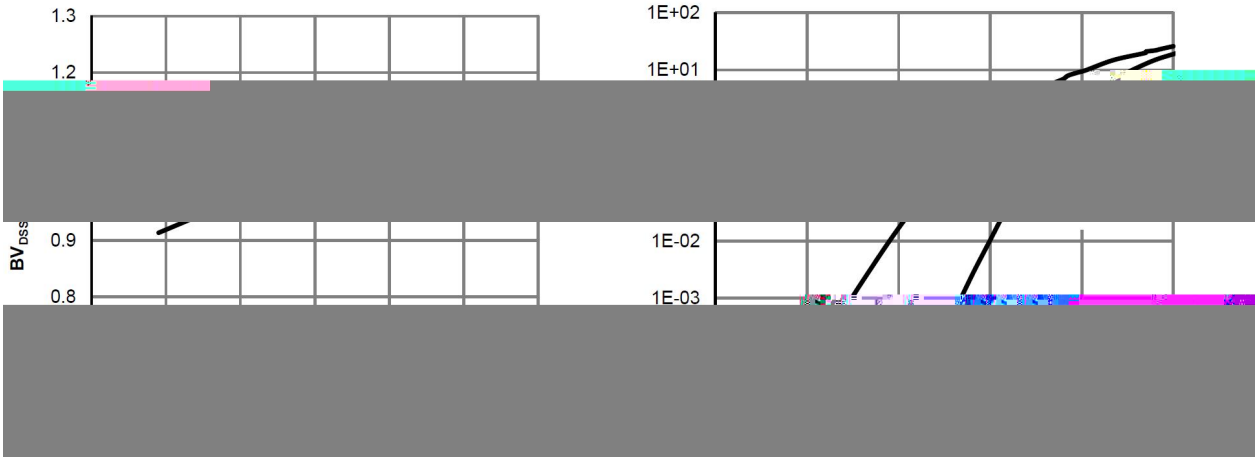
/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Continuous Diode Forward Current	I_S				11	A
Total Gate Charge	Q_g	V_{DS}=480V I_D=5.5A V_{GS}=10V		18		nC
Gate-Source Charge	Q_{gs}			7		nC
Gate-Drain Charge	Q_{gd}			4.5		nC

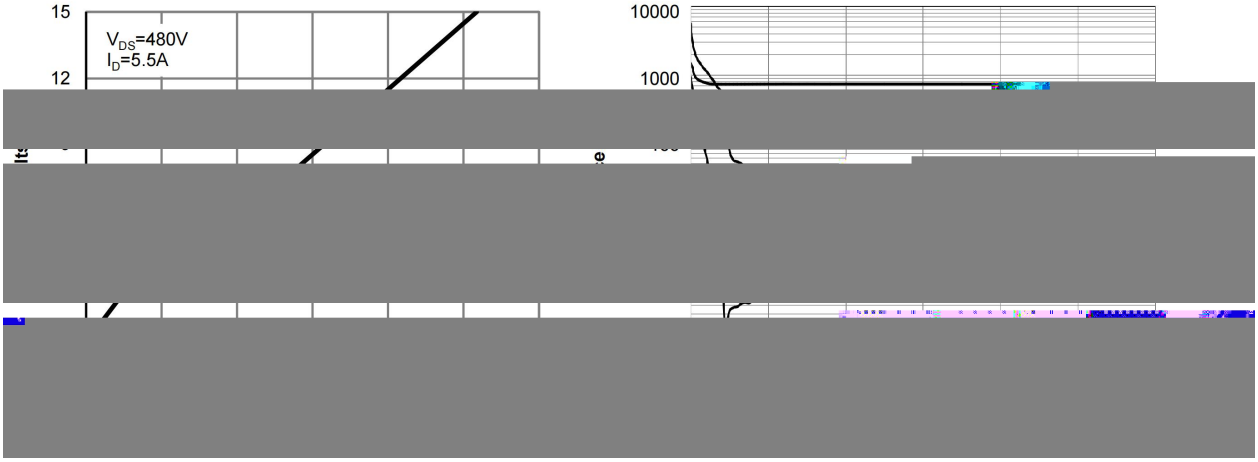
/ Electrical Characteristic Curve

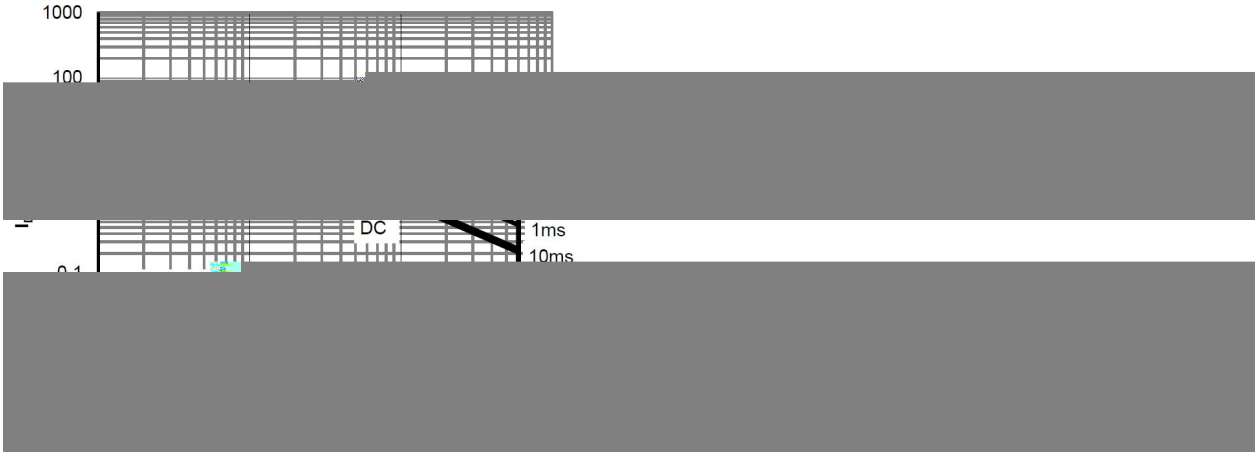




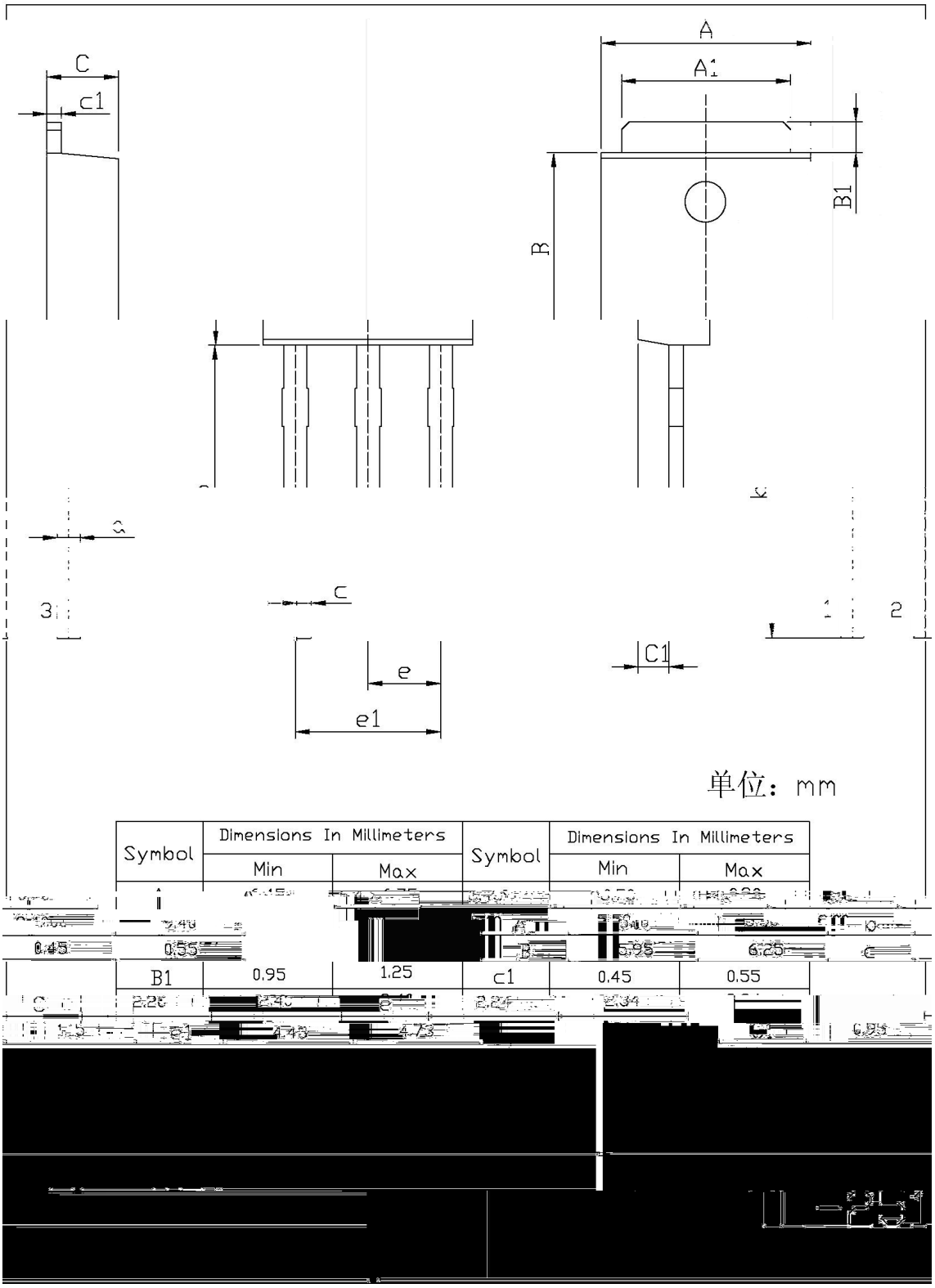


/ Electrical Characteristic Curve

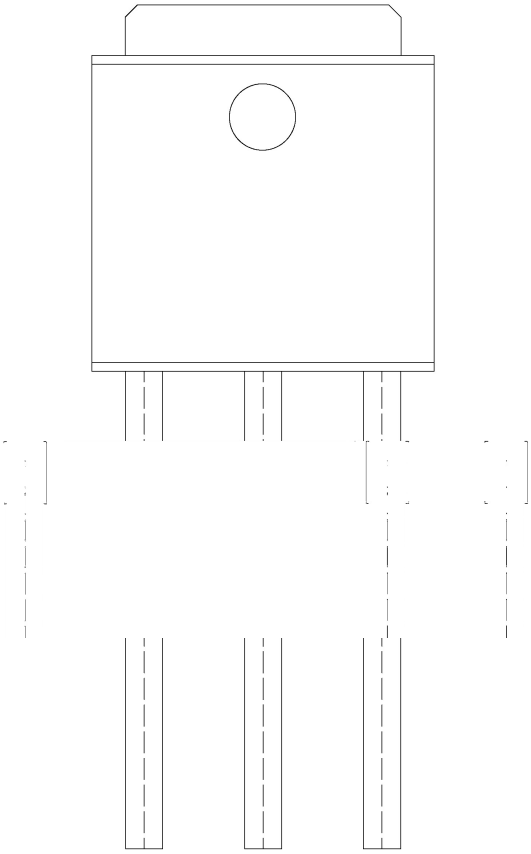




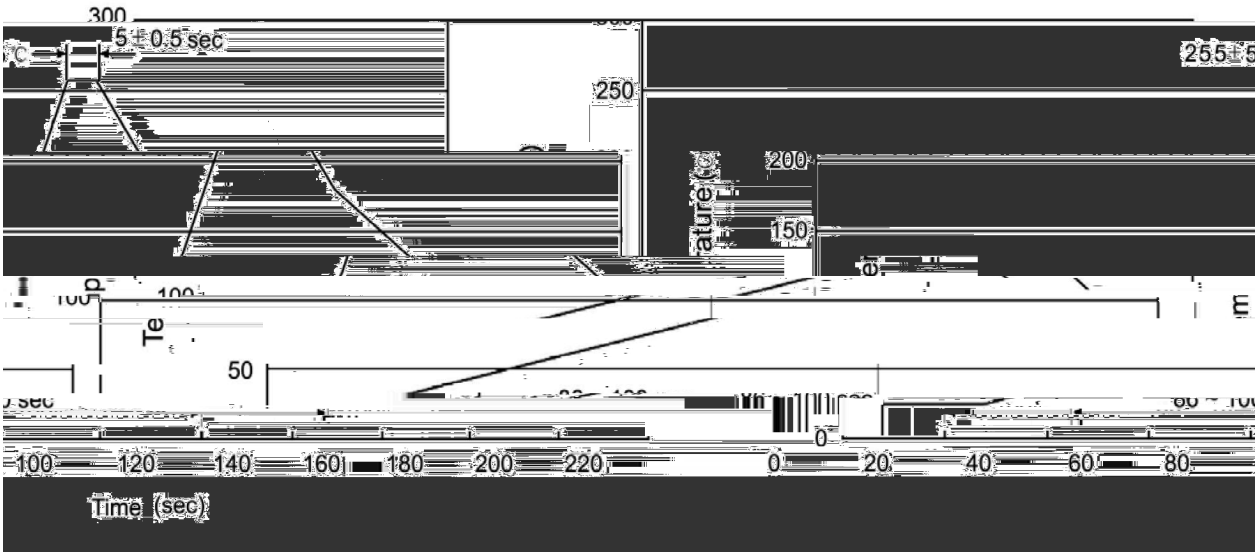
/ Package Dimensions



Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max		Min	Max
B1	0.95	1.25	c1	0.45	0.55



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



Note:

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

/ Resistance to Soldering Heat Test Conditions

270±5℃	10±1 sec.	Temp.:270±5	Time:10±1 sec

/ Packaging SPEC.

/ BULK

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm^3)		
	Units/Bag /	Bags/Inner Box /	Units/Inner Box /	Inner Boxes/Outer Box /	Units/Outer Box /	Bag 袋	Inner Box 盒	Outer Box 箱
TO-251	1,000	10	10,000	5	50,000	135×190	237×172×102	560×245×195

/ TUBE

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm^3)		
	Units/Tube /	Tubes/Inner Box /	Units/Inner Box /	Inner Boxes/Outer Box /	Units/Outer Box /	Tube 套管	Inner Box 盒	Outer Box 箱
TO-251/252	75	48	3,600	5	18,000	526×20.5×5.25	555×164×50	575×290×180

/ Notices