A	2022.08.03	ALL	AOS-AOD4185		
	[redacted]				

TO-252 P MOS

P-CHANNEL MOSFET in a TO-252 Plastic Package.

Low On-Resistance, fast switc

/ Absolute Maximum Ratings(T_a=25)

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	-40	V
Drain Current - Continuous		I_D(T_c=25)	-50	A
Drain Current – Pulsed		I_{DM}	-128	A
Gate-Source Voltage		V_{GS}	± 20	V
Power Dissipation		P_D(T_c=25)	62.5	W
Single Pulse Avalanche Energy(L=0.5mH)		E_{AS}	317.5	mJ
Avalanche Current(L=0.5mH)		I_{AS}	-31.5	A
Junction and Storage Temperature Range		T_j, T_{stg}	-55 to 150	℃
Thermal resistance, junction - ambient	t ≤ 10s	$R_{\theta JA}$	20	℃/ W
	Steady-State		50	
Thermal resistance, junction - case	Steady-State	$R_{\theta JC}$	2.0	

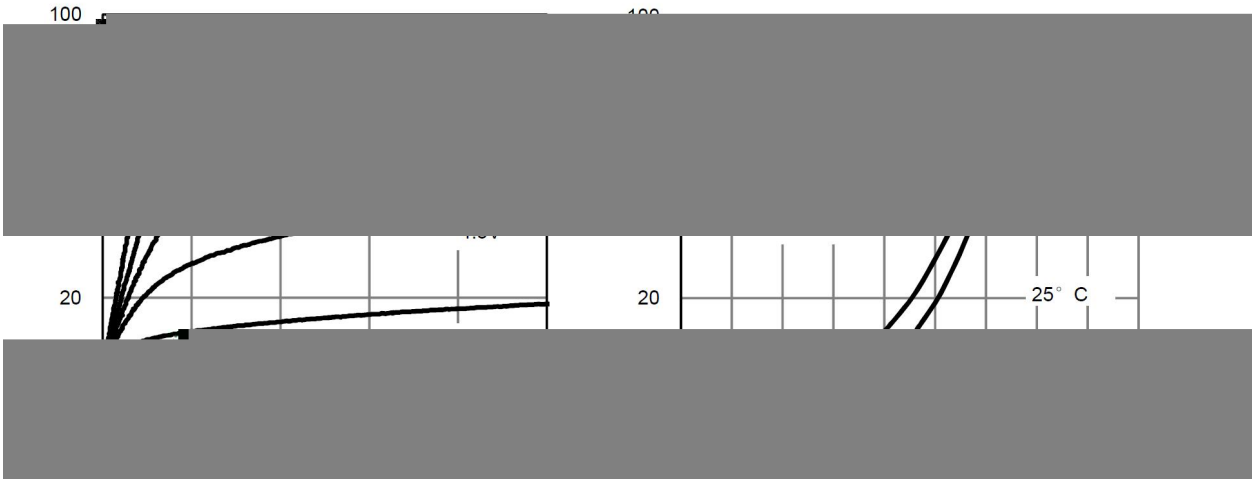
/ Electrical Characteristics(Ta=25)

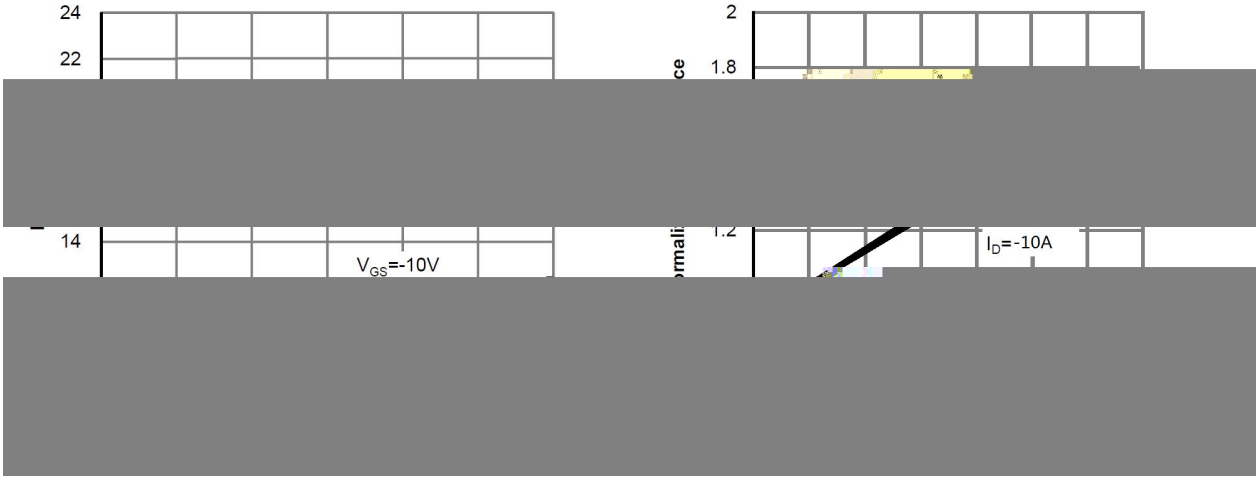
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	I_D=-250μA V_{GS}=0V	-40	-48		V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-40V V_{GS}=0V			-1	uA
Gate-Body leakage current	I_{GSS}	V_{DS}=0V, V_{GS}= ±20V			100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=VGS I_D=-250μA	-1	-1.7	-2.5	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	V_{GS}=-10V, I_D=-20A		11.4	14	mΩ
		V_{GS}=-4.5V, I_D=-10A		15	20	
Diode Forward Voltage	V_{SD}	I_S=-1A, V_{GS}=0V			-1.2	V
Input Capacitance	C_{iss}	V_{DS}=-25V V_{GS}=0V f=1.0MHz		4760		pF
Output Capacitance	C_{oss}			2800		
Reverse Transfer Capacitance	C_{rss}			1960		
Gate resistance	R_g	V_{GS}=0V V_{DS}=0V f=1MHz		17.5		Ω
Total Gate Charge	$Q_{g(10V)}$	V_{GS}=-10V, V_{DS}=-20V, I_D=-20A		43		nC
Total Gate Charge	$Q_{g(4.5V)}$			19		
Gate Source Charge	Q_{gs}			7.2		
Gate Drain Charge	Q_{gd}			8.5		

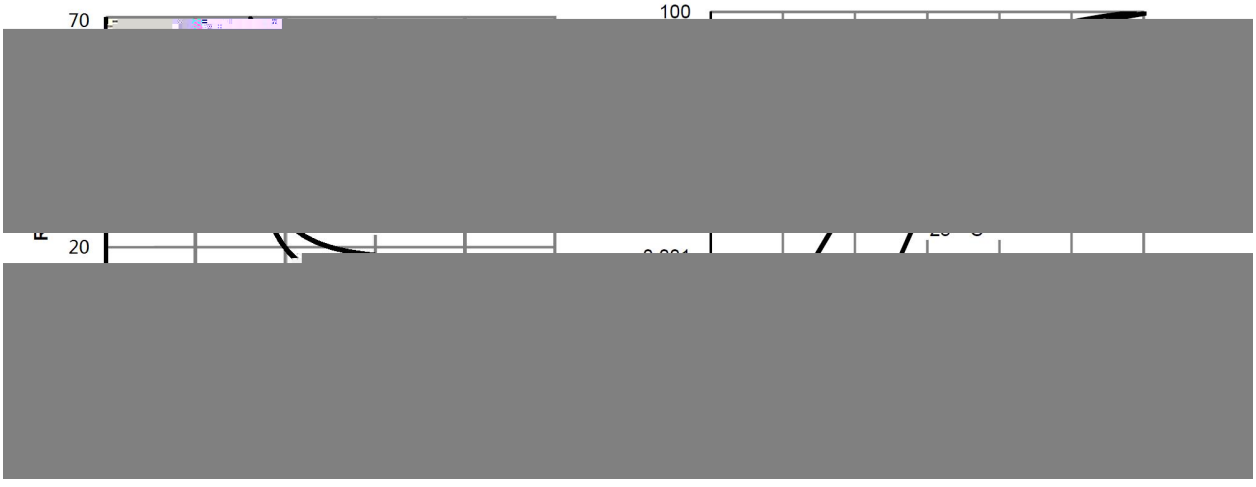
/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Turn-On Delay Time	$t_{d(on)}$	V_{GS}=-10V V_{DS}=-20V R_L=1Ω R_{GEN}=3Ω		9.4		ns
Turn-On Rise Time	t_r			20		
Turn-Off Delay Time	$t_{d(off)}$			56		
Turn-Off Fall Time	t_f			32		

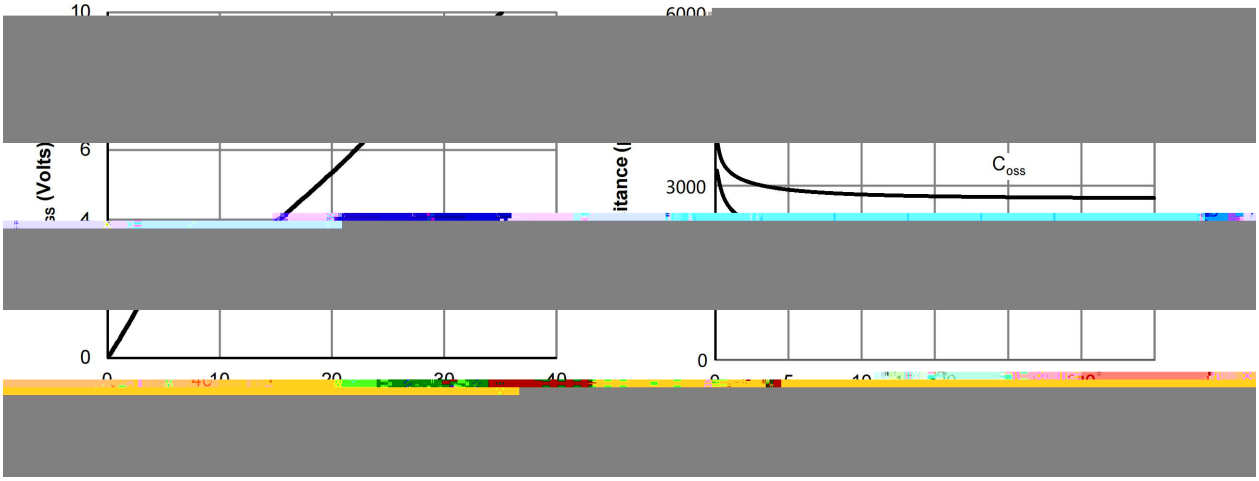
/ Electrical Characteristic Curve







/ Electrical Characteristic Curve



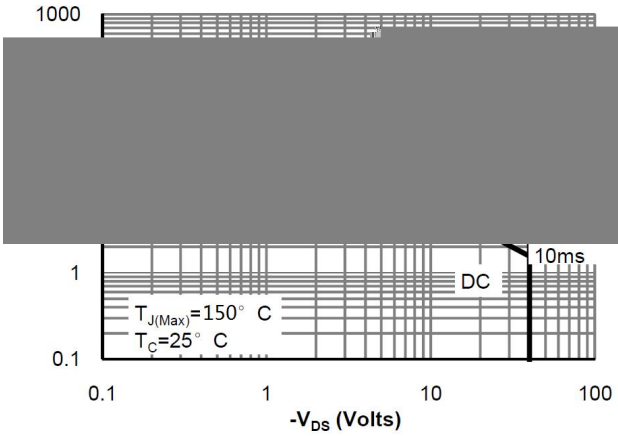
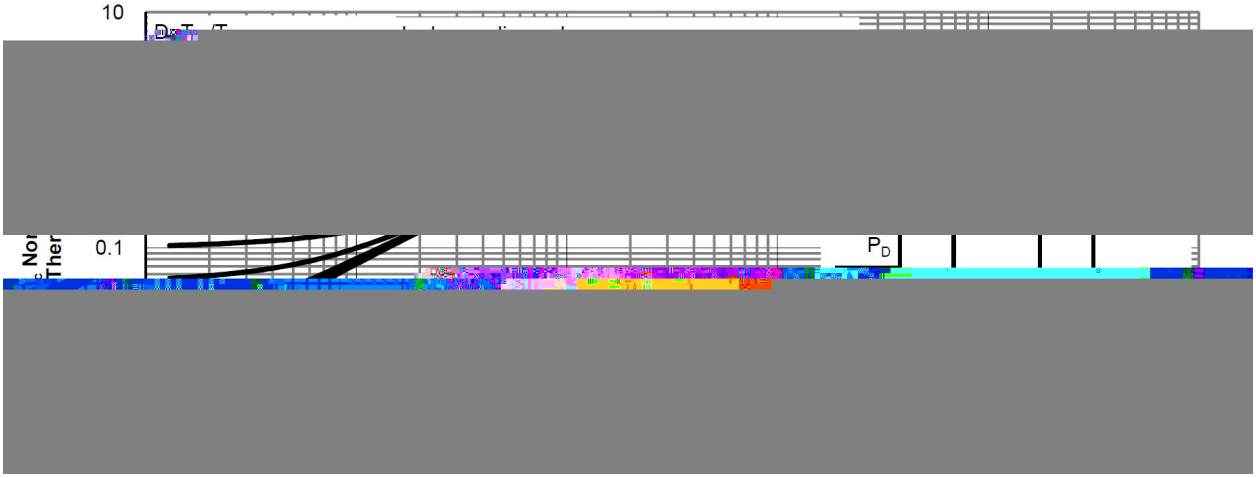
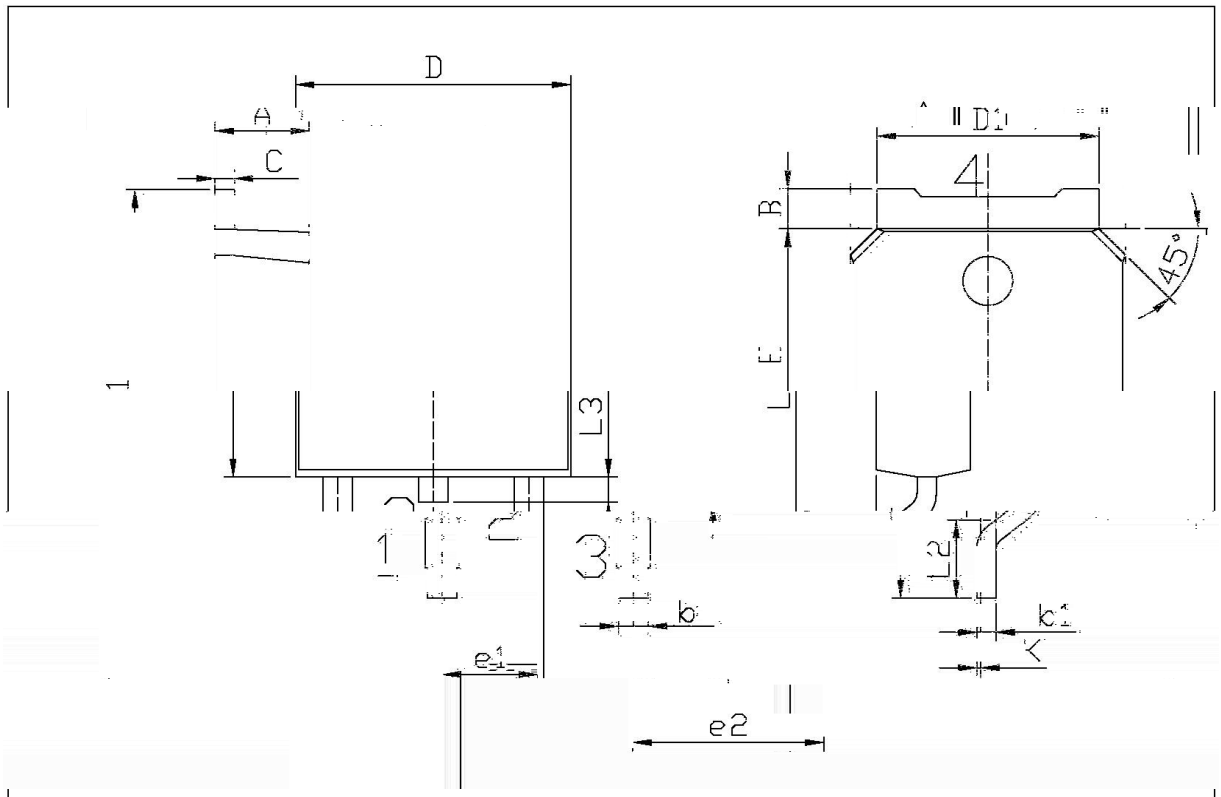


Figure 9: Maximum Forward Biased Safe Operating Area



/ Package Dimensions

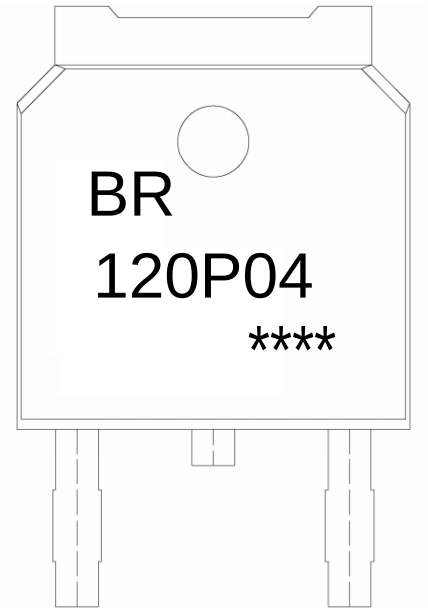


单位：mm

Dimensions In Millimeters					
Symbol	Min	Max	Symbol	Min	Max
A	2.20	2.40	B	5.95	6.25
B	0.95	1.25	e1	2.24	2.34
b	0.70	0.90	e2	4.48	4.68
C	0.45	0.55	L1	9.85	10.25
L2	1.70	2.00			
0.90	D	6.45	6.75	L3	0.60
[illegible]	[illegible]	[illegible]	[illegible]	K	0.00

TO-252

/ Marking Instructions



BR

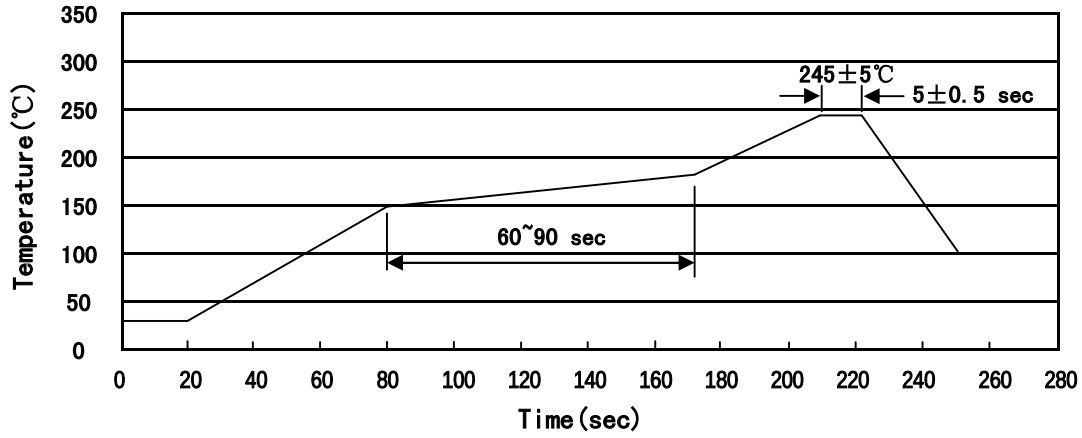
120P04

****

Note:

BR:	Company Code
120P04:	Product Type
****:	Lot No. Code, code change with Lot No

( ) /



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 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm³)		
	Units/Reel 只/卷盘	Reels/Inner Box 卷盘/盒	Units/Inner Box 只/盒	Inner Boxes/Outer Box 盒/箱	Units/Outer Box 只/箱	Reel	Inner Box 盒	Outer Box 箱
TO-252	2,500	2	5,000	6	30,000	13″ ×16	360×360×50	380×335×366

/ TUBE

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm³)		
	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 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