TO-220F SiC N MOS

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

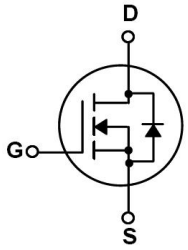
V_{DS}=800V I_D=7A

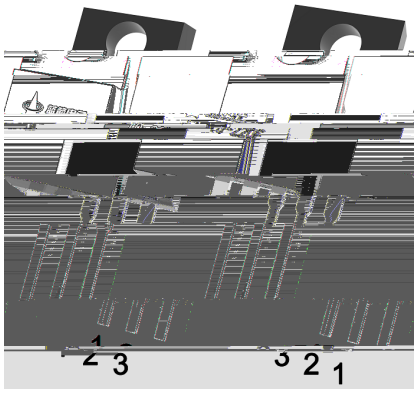
$R_{DS(on)}$@15V≤650mΩ(Type.500mΩ)

$R_{DS(on)}$@18V≤600mΩ(Type. 378mΩ)

LED PD PC

LED driver, PD charger, PC adapter, Air-conditioning, E-bike charger.





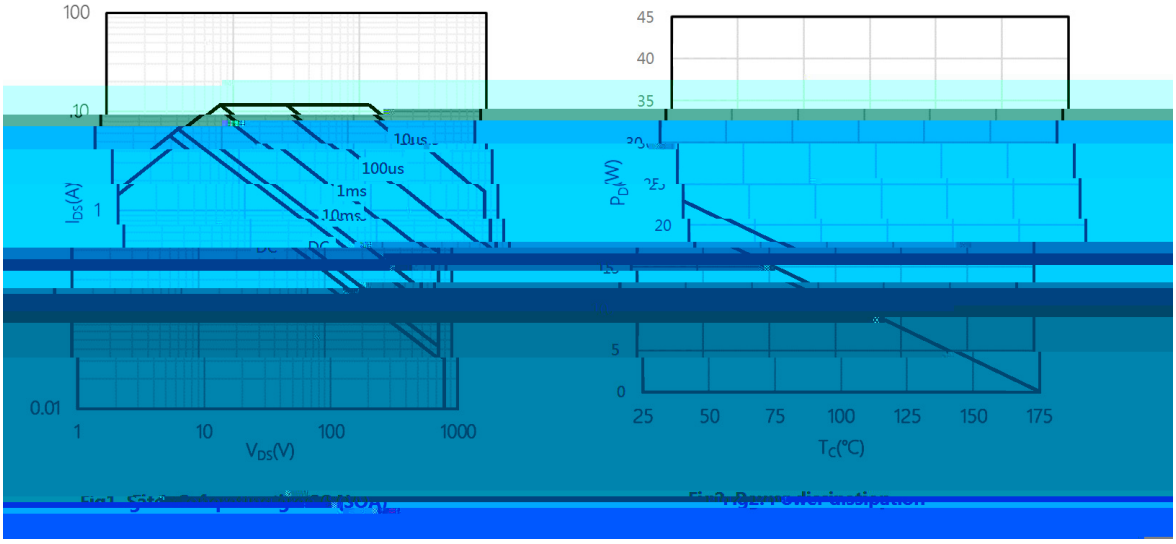
PIN1 G PIN 2 D PIN 3 S

See Marking Instructions.

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DSS}	800	V
Continuous DC Drain Current for $R_{th(j-c,typ.)}$, Limited by $T_{VJ(max)}$	I_D(Tc=25)	7	A
	I_D(Tc=100)	5.7	A
Peak Drain Current, tp Limited by $T_{VJ(max)}$	I_{DM}	12	A
Gate-Source Max Voltage	$V_{GS,max}$	-10/+22	V
Gate-Source Operate Voltage	$V_{GS,op}$	0/+15	V
Single Pulse Avalanche Energy	E_{AS}	10.2	mJ
Power Dissipation or $R_{th(j-c,typ.)}$	P_D(Tc=25)	23	W
Operating and Storage Temperature Range	T_{VJ},T_{STG}	-55 to 175	
MOSFET/Body Diode Junction-Case Thermal Resistance	$R_{th(j-c)}$	6.52	/W

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV					

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Turn-On Delay Time	$t_{d(on)}$	V_{GS}=0/15V L=600μH V_{DD}=400V I_D=4A R_g=10Ω		16.1		ns
Turn-On Rise Time	t_r			13.9		
Turn-Off Delay Time	$t_{d(off)}$			13.3		
Turn-Off Fall Time	t_f			13.7		
Turn−On Switching Loss	E_{on}			41.2		μJ
Turn−Off Switching Loss	E_{off}			3.1		
Total Switching Energy	E_{tot}			44.3		
Gate resistance	R_g	V_{AC}=25mV f=1MHz		35		Ω
Input Capacitance	C_{iss}	V_{DS}=400V V_{GS}=0V f=1MHz		149		pF
Output Capacitance	C_{oss}			11		
Reverse Transfer Capacitance	C_{rss}			0.8		
Total Gate Charge	Q_g	V_{GS}=0/15V, V_{DS}=400V, I_D=4A		6.7		nC
Gate Source Charge	Q_{gs}			3.0		
Gate Drain Charge	Q_{gd}			1.1		





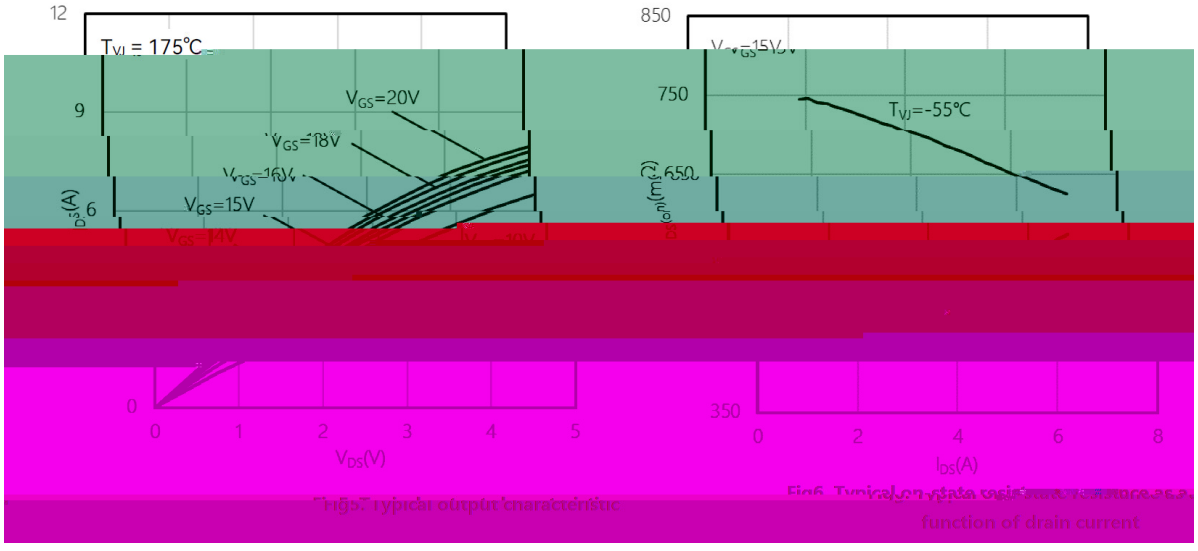
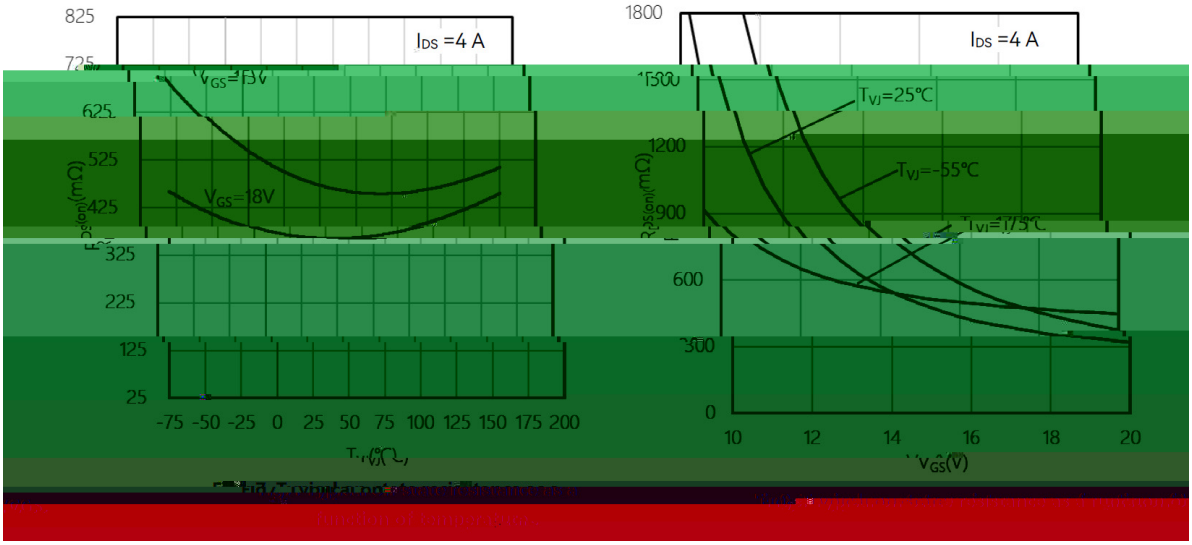
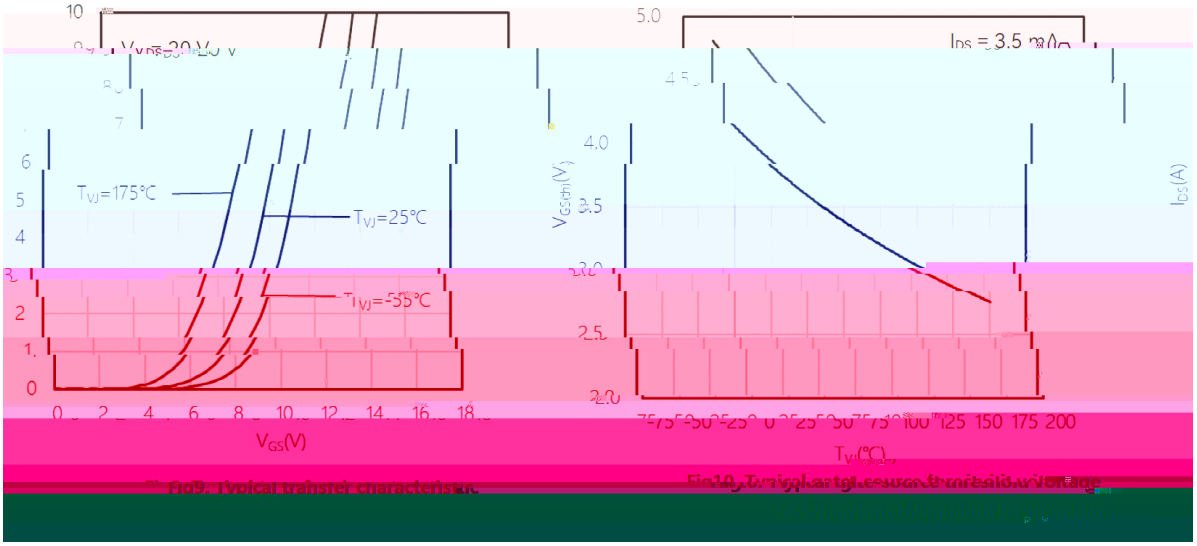
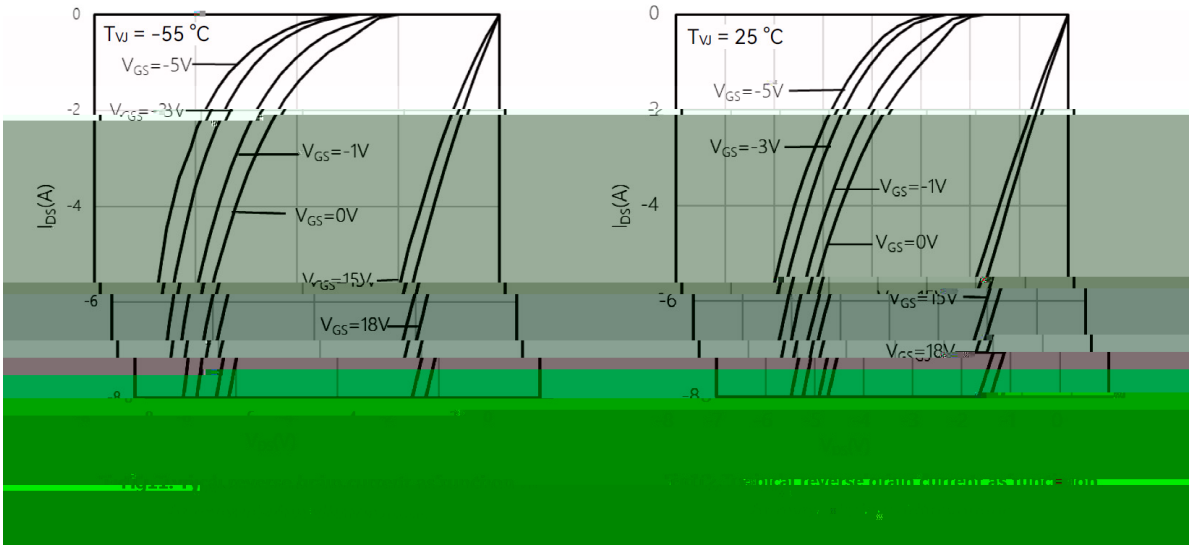


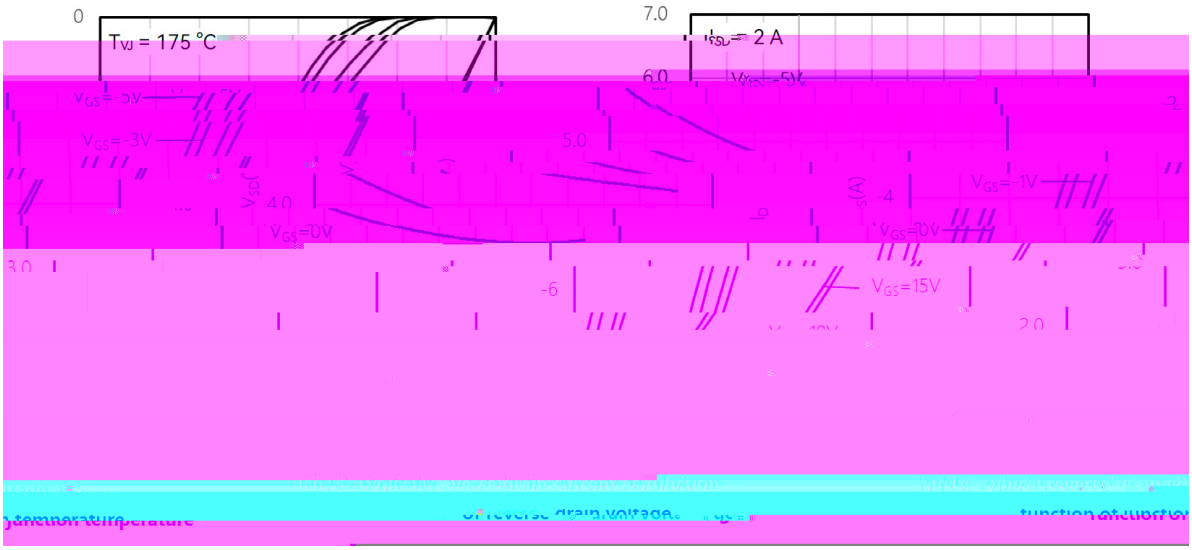
Fig5. Typical output characteristic

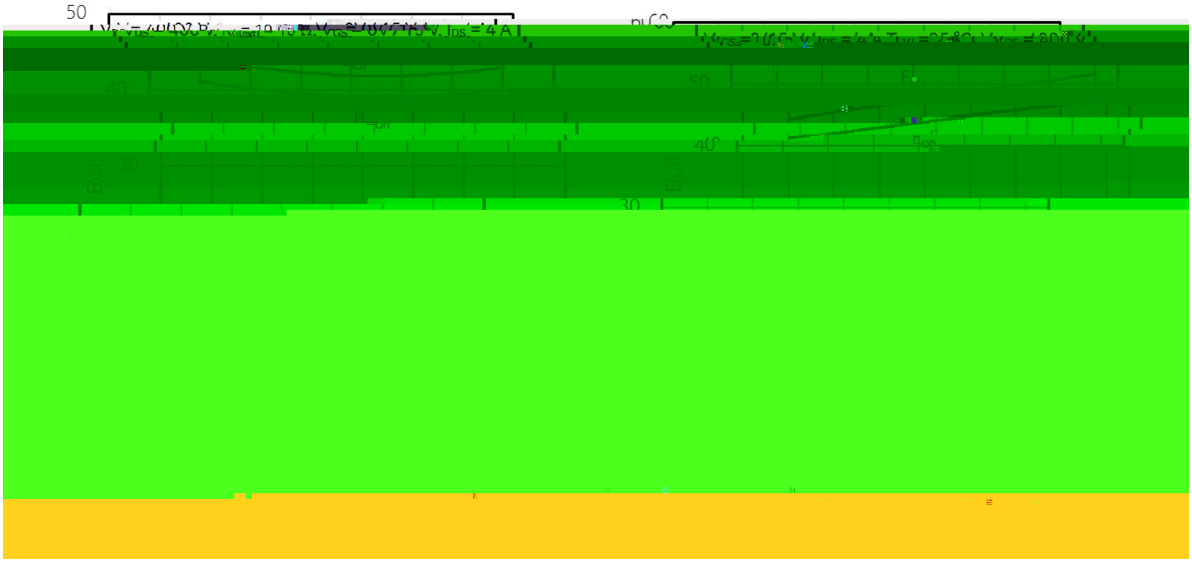
Fig6. Typical on-state resistance vs. a function of drain current

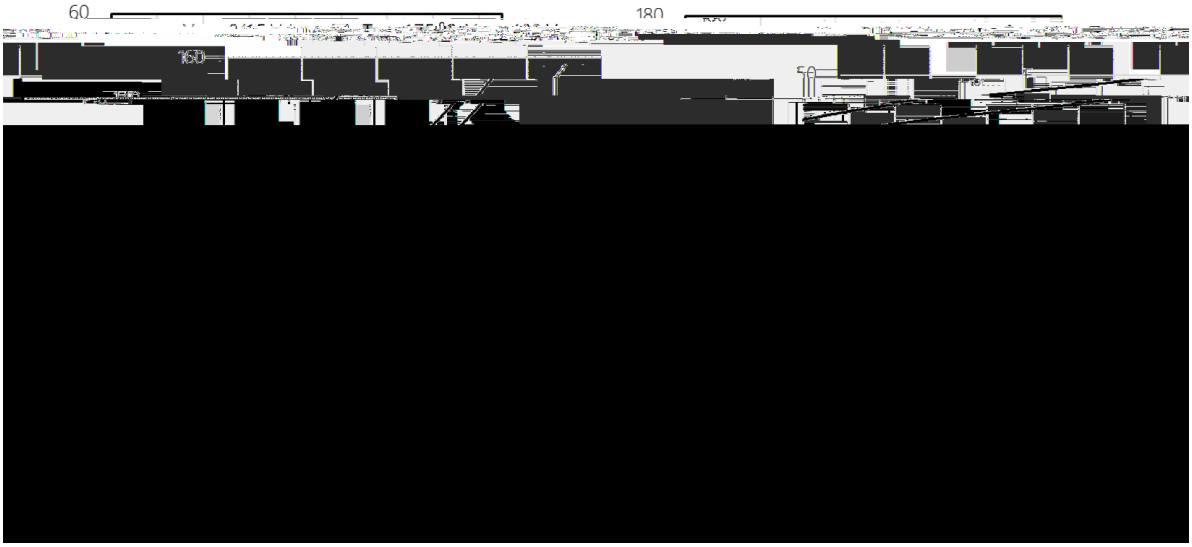

825
725
625
525
425
325
225
125
25
IDS =4 A
VGS=15V
VGS=18V
-75 -50 -25 0 25 50 75 100 125 150 175 200
1800
1500
1200
900
600
300
0
IDS =4 A
TVJ=25℃
TVJ=-55℃
TVJ=175℃
10 12 14 16 18 20
VGS(V)

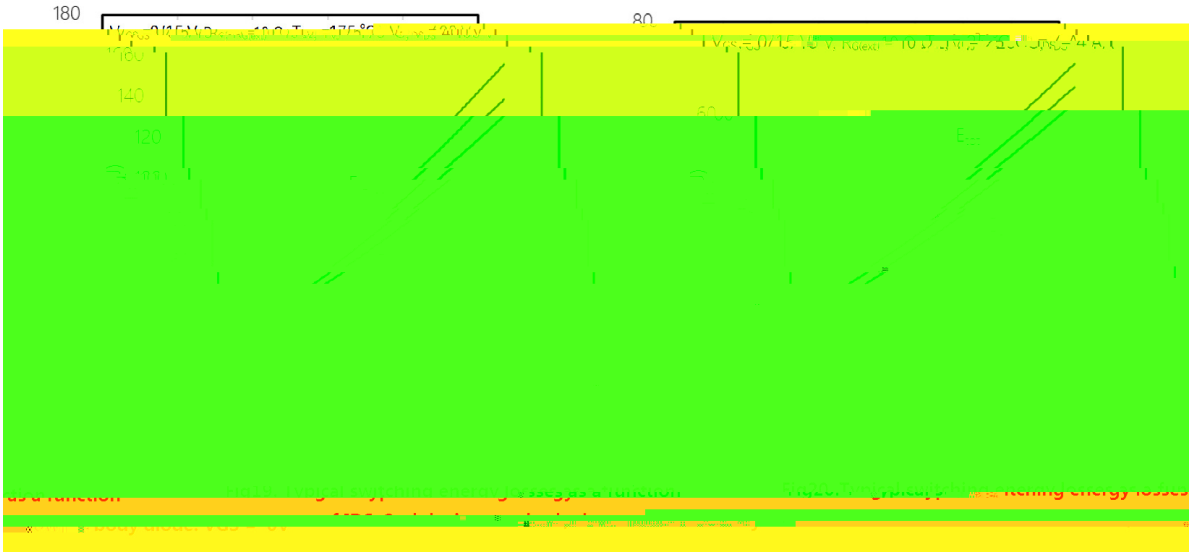

10
6
5
4
2
1
0
TVJ=175℃
TVJ=25℃
TVJ=-55℃
0 2 4 6 8 10 12 14 16 18
VGS(V)
5.0
4.0
3.5
2.5
2.0
IDS(A)
VGS(th)(V)
125 150 175 200

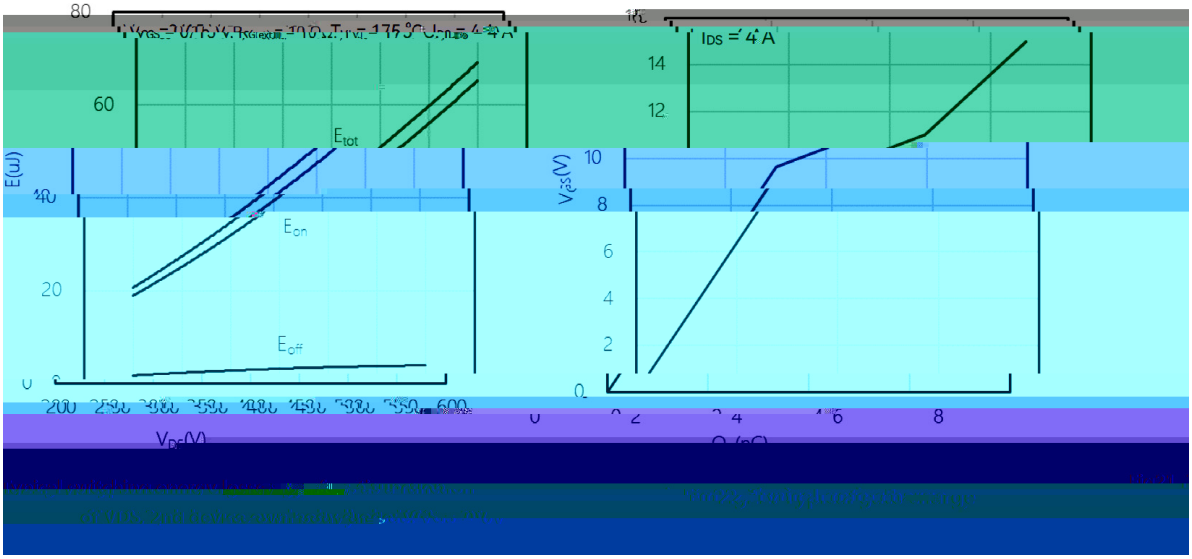

0
-2
-4
-6
TVJ = -55 °C
VGS=-5V
VGS=-3V
VGS=-1V
VGS=0V
VGS=15V
VGS=18V
IDS(A)
TVJ = 25 °C
VGS=-5V
VGS=-3V
VGS=-1V
VGS=0V
VGS=15V
VGS=18V
IDS(A)


0
T_{VJ} = 175 °C
V_{GS}= -5V
V_{GS}= -3V
V_{GS}=0V
7.0
I_{SD}= 2 A
6.0
V_{GS}=-5V
5.0
V_{GS}=-1V
V_{GS}=0V
V_{GS}=15V


50
40
30


60
180
150
50





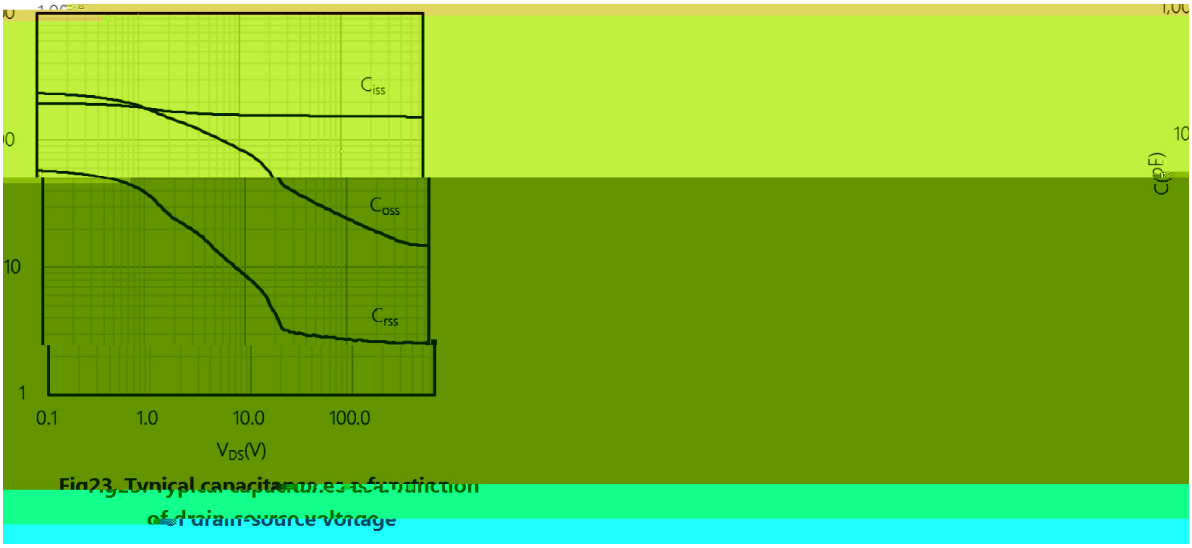
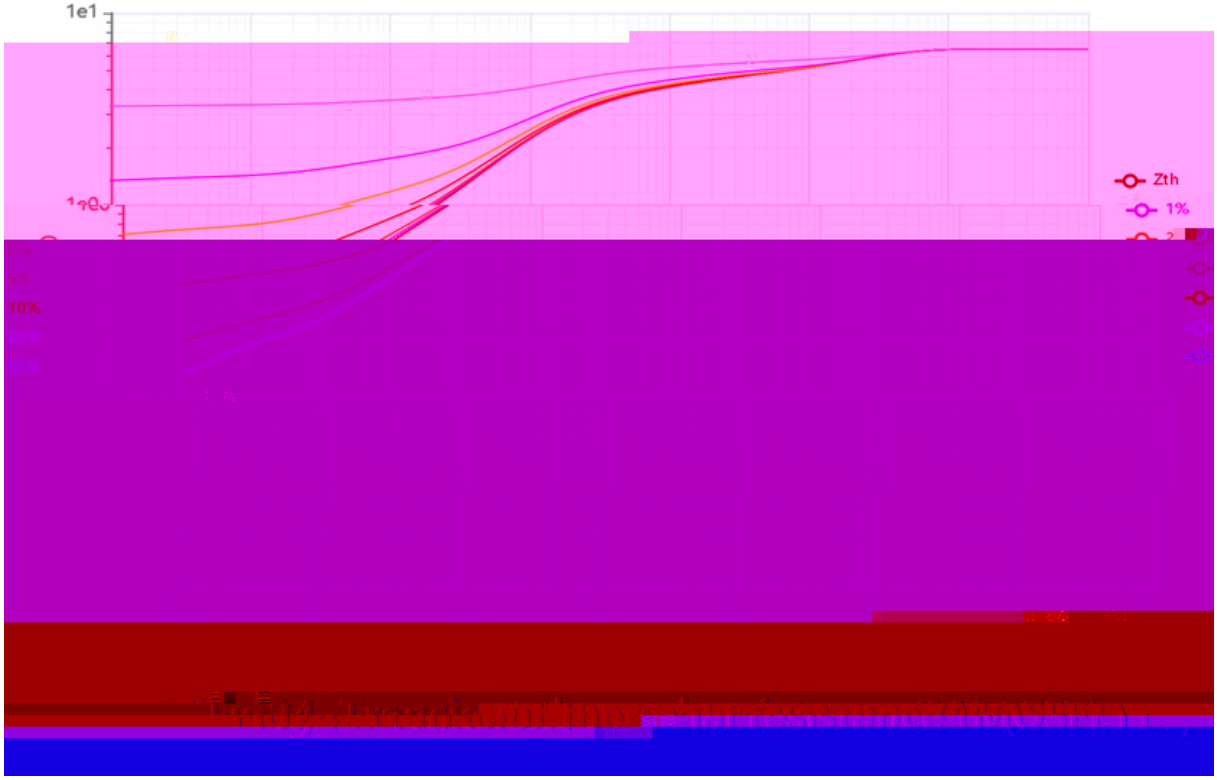
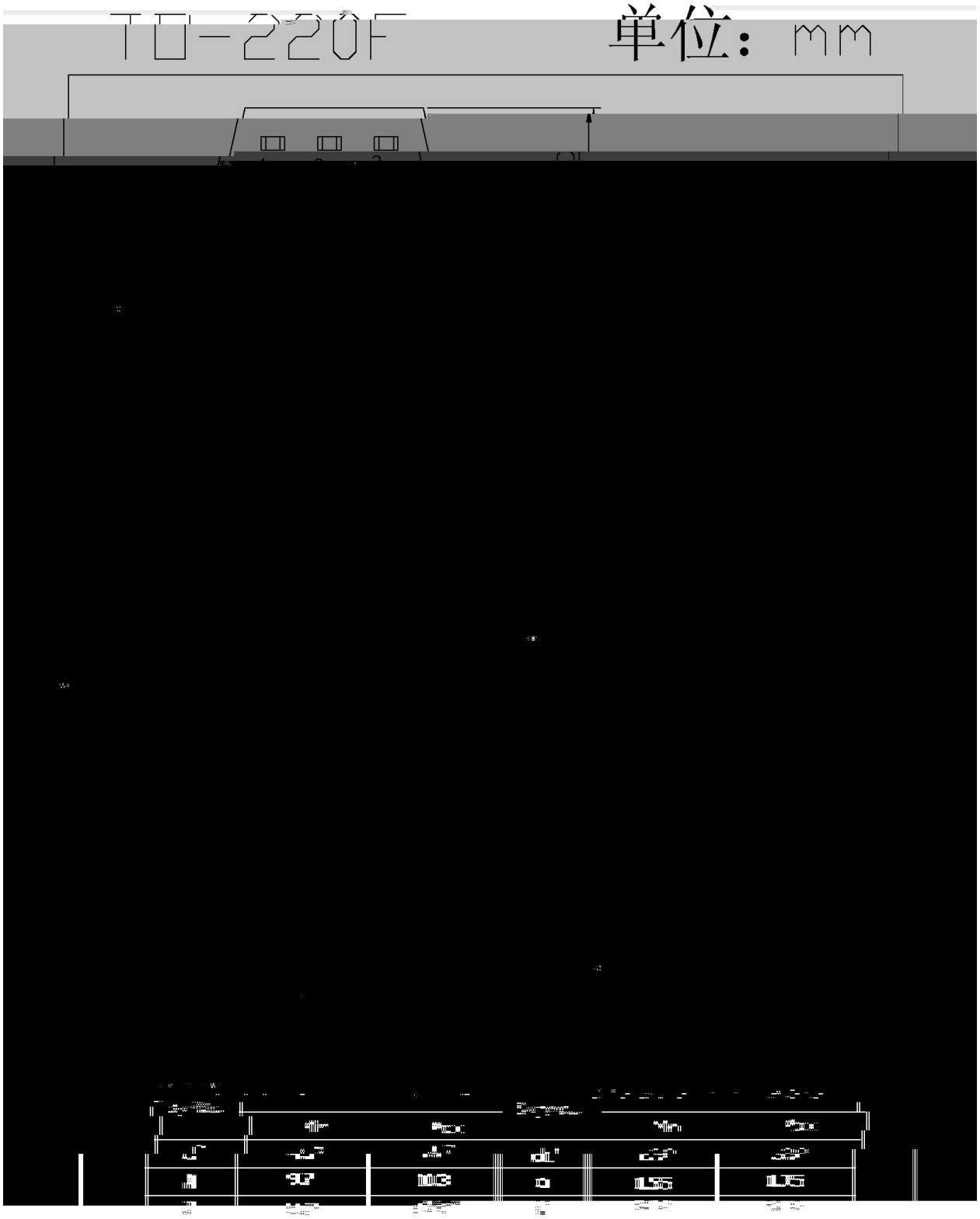
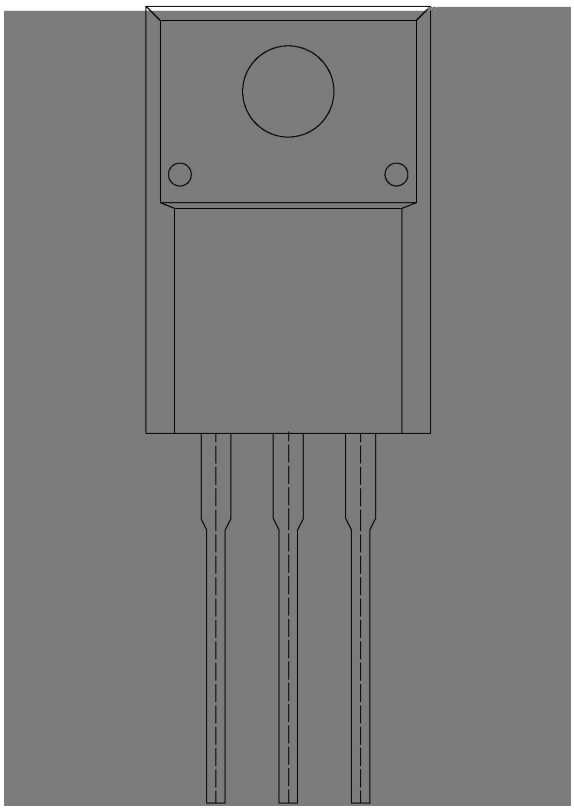
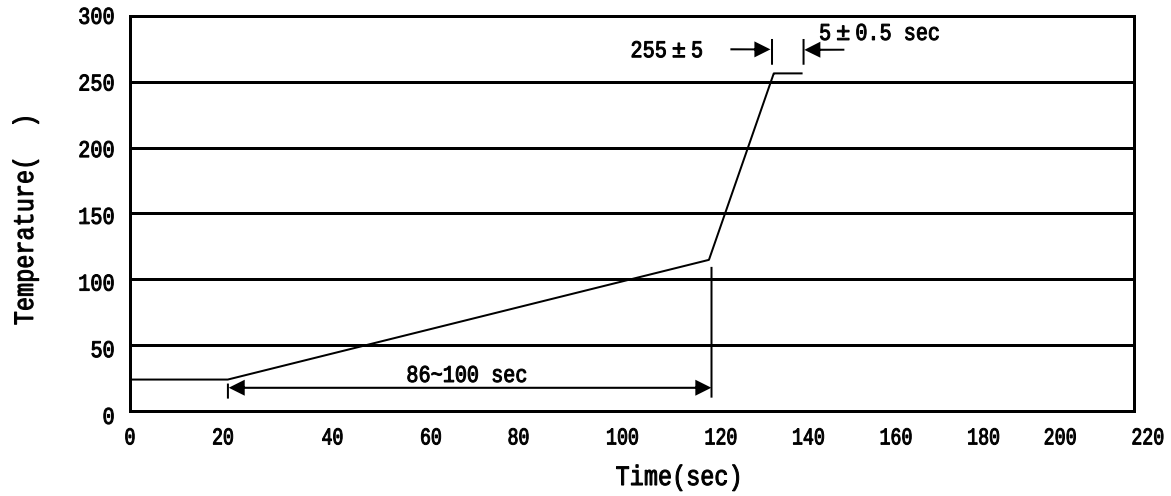


Fig23 Typical capacitances as a function of drain-source voltage


1e1
Zth
1%


TO-220F
单位：mm





		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.	

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

/ BULK

Package Type	Units					Dimension		(unit mm³)
TO-220/F	200	10	2,000	5	10,000	135×190	237×172×102	560×245×195

/ TUBE

Package Type	Units					Dimension		(unit mm³)
TO-220/F	50	20	1,000	5	5,000	532×31.4×5.5	555×164×50	575×290×180

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