TO-252 SiC N MOS

SiC N-CHANNEL MOSFET in a TO-252 Plastic Package.

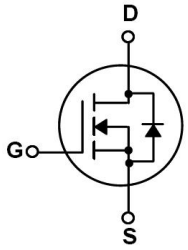
V_{DS}=800V I_D=8.8A

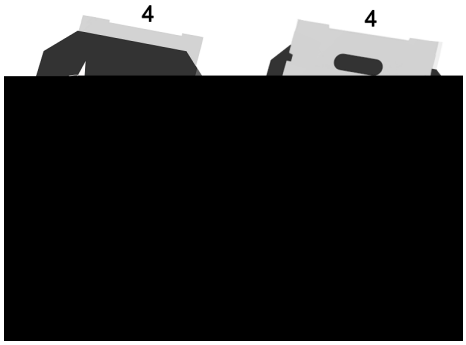
$R_{DS(on)}$@15V≤568mΩ(Type.437mΩ)

$R_{DS(on)}$@18V≤480mΩ(Type. 316mΩ)

LED PD PC

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





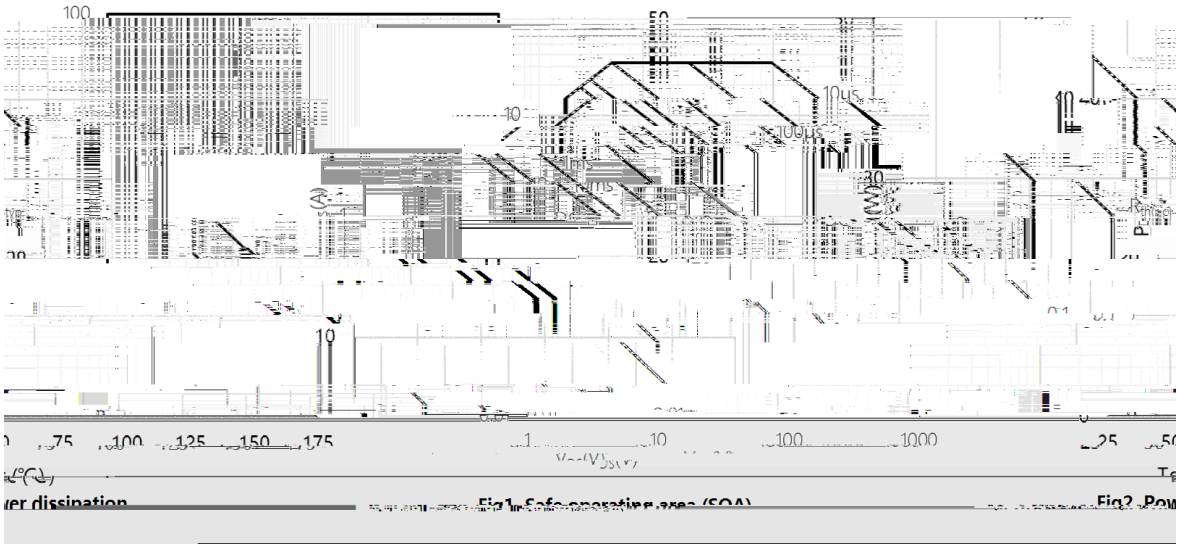
PIN1 G PIN 2 D PIN 3 S PIN 4 D

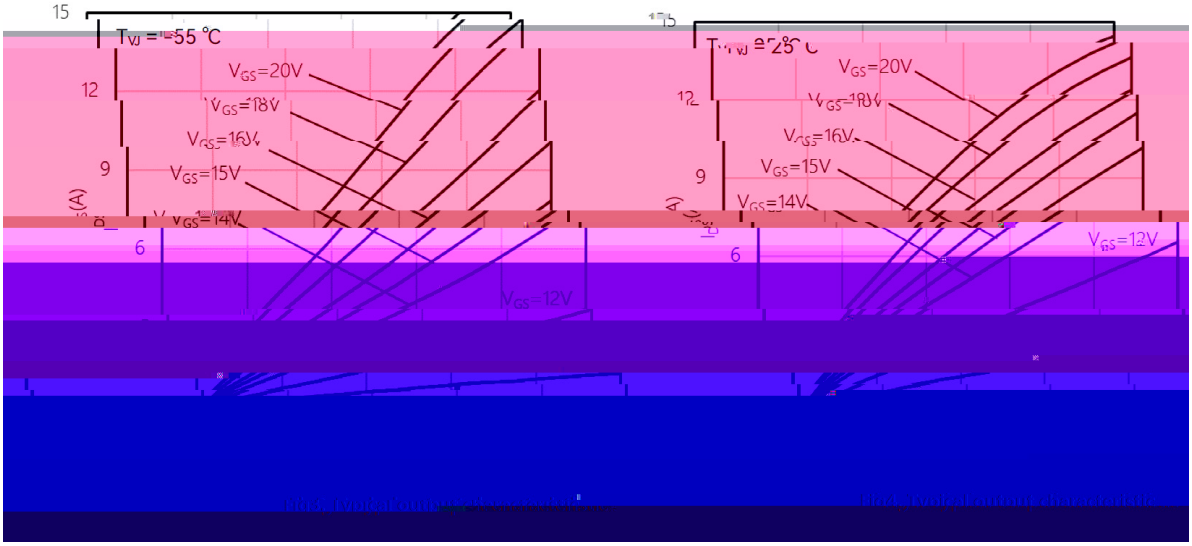
See Marking Instructions.

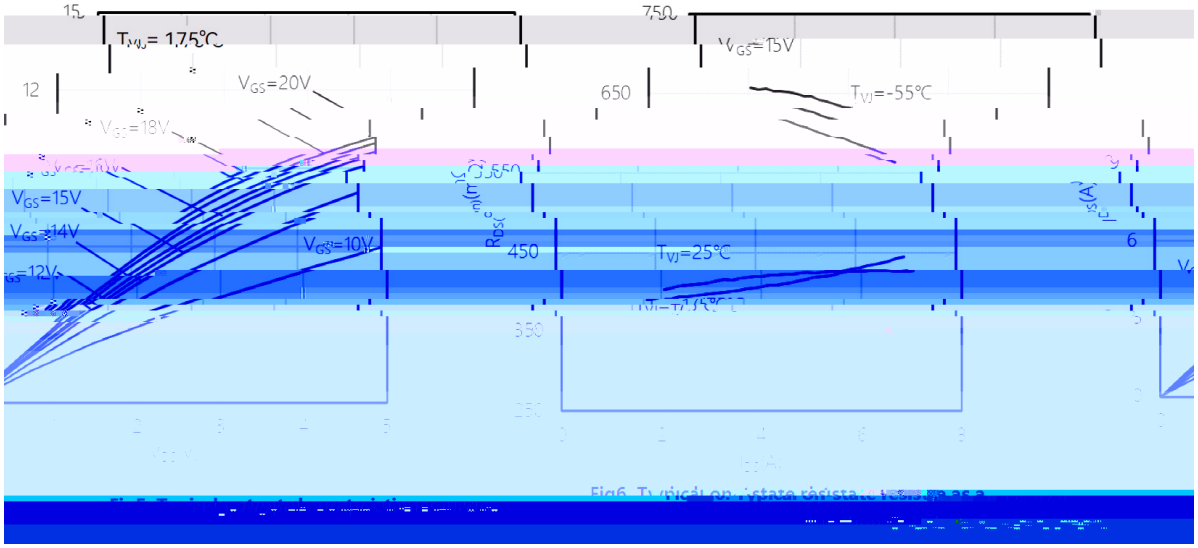
Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DSS}	800	V
Continuous DC Drain Current for $R_{th(j-c,typ.)}$, Limited by $T_{VJ(max)}$	I_D(Tc=25)	8.8	A
	I_D(Tc=100)	6.8	A
Peak Drain Current, tp Limited by $T_{VJ(max)}$	I_{DM}	14	A
Gate-Source Max Voltage	$V_{GS,max}$	-10/+22	V
Gate-Source Operate Voltage	$V_{GS,op}$	0/+15	V
Single Pulse Avalanche Energy	E_{AS}	13.3	mJ
Power Dissipation or $R_{th(j-c,typ.)}$	P_D(Tc=25)	45	W
Operating and Storage Temperature Range	T_{VJ},T_{STG}	-55 to 175	
MOSFET/Body Diode Junction-Case Thermal Resistance	$R_{th(j-c)}$	3.33	/W

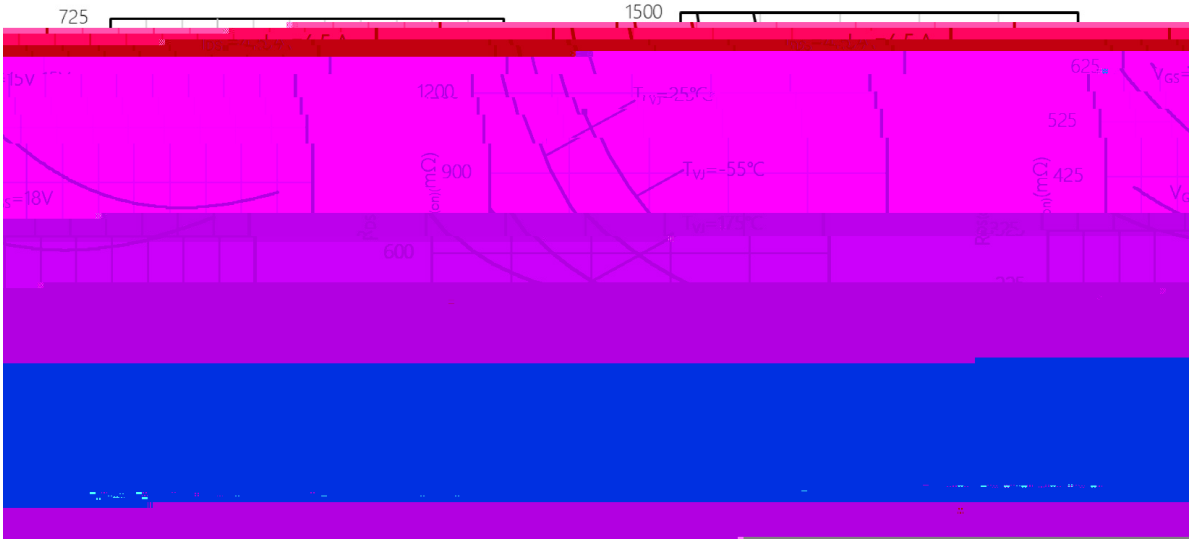
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV					

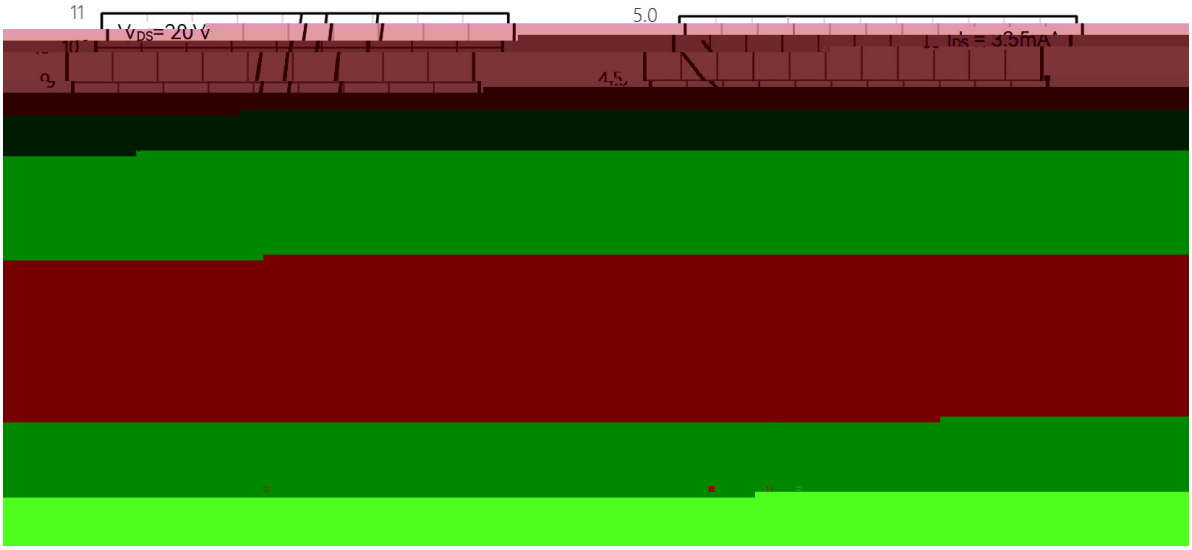
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Turn-On Delay Time	$t_{d(on)}$	V_{GS}=0/15V L=600μH V_{DD}=400V I_D=4.5A R_g=9.1Ω		17.0		ns
Turn-On Rise Time	t_r			12.2		
Turn-Off Delay Time	$t_{d(off)}$			14.5		
Turn-Off Fall Time	t_f			13.1		
Turn−On Switching Loss	E_{on}			45.4		μJ
Turn−Off Switching Loss	E_{off}			3.86		
Total Switching Energy	E_{tot}			49.2		
Gate resistance	R_g	V_{AC}=25mV f=1MHz		25		Ω
Input Capacitance	C_{iss}	V_{DS}=400V V_{GS}=0V f=1MHz		170		pF
Output Capacitance	C_{oss}			13		
Reverse Transfer Capacitance	C_{rss}			1.3		
Total Gate Charge	Q_g	V_{GS}=0/15V, V_{DS}=400V, I_D=4.5A		9.0		nC
Gate Source Charge	Q_{gs}			3.2		
Gate Drain Charge	Q_{gd}			1.3		

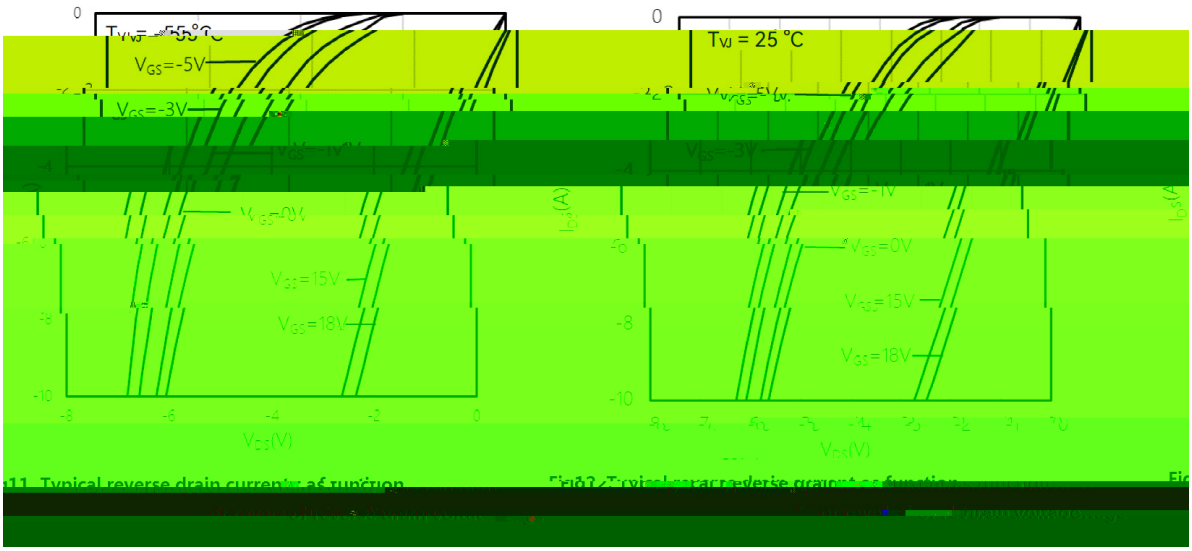


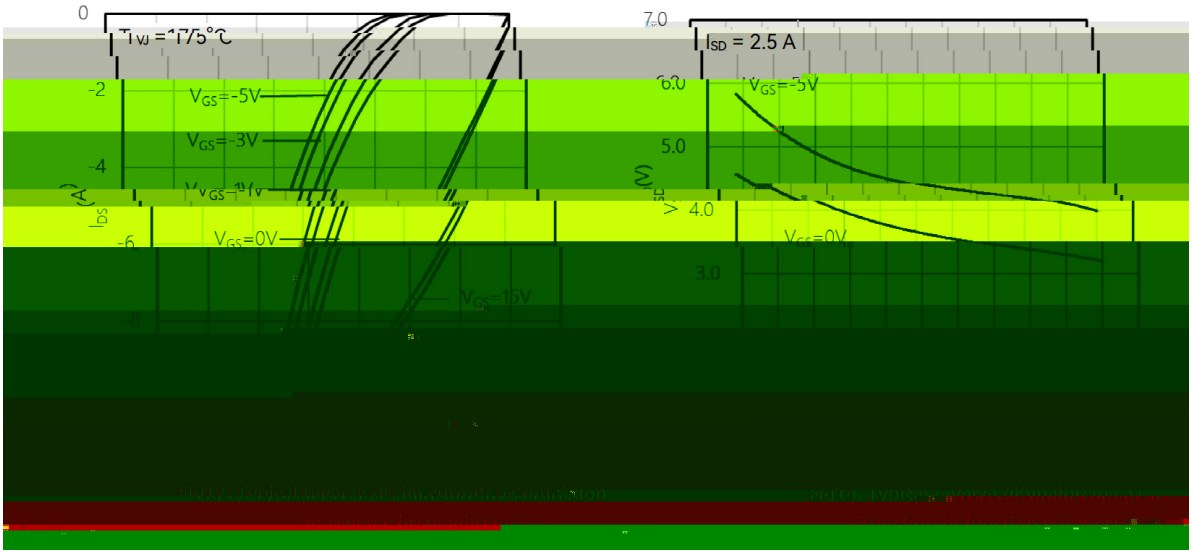

15
T_{VJ} =-55 °C
V_{GS}=20V
V_{GS}=18V
V_{GS}=16V
V_{GS}=15V
V_{GS}=14V
V_{GS}=12V
12
9
6
T_{VJ} =25 °C

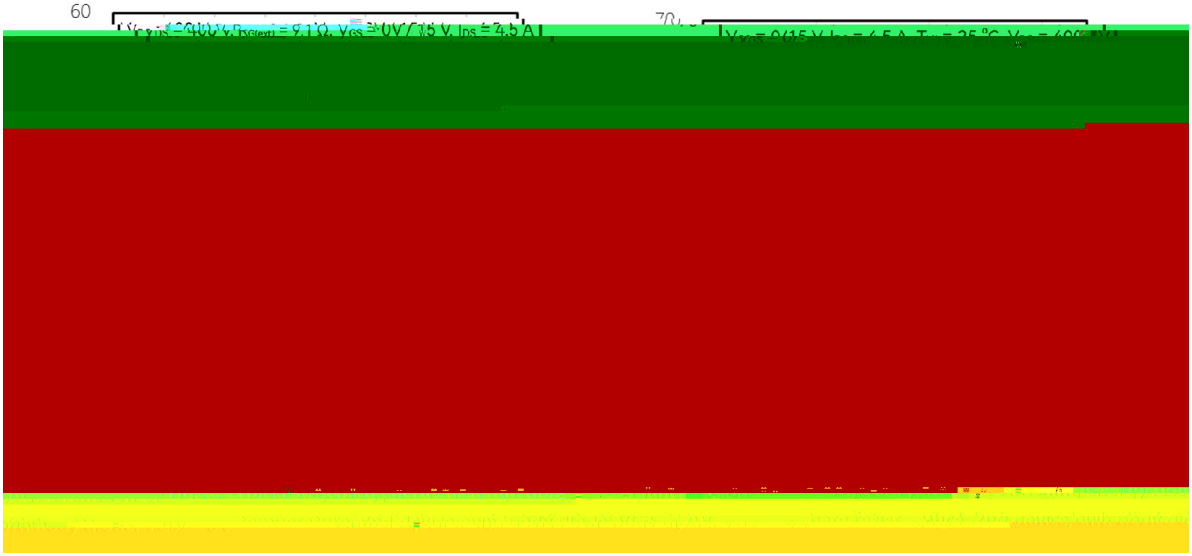

T_{VJ}= 175°C
V_{GS}=20V
V_{GS}=18V
V_{GS}=15V
V_{GS}=14V
V_{GS}=12V
V_{GS}=10V
12
450
V_{GS}=15V
T_{VJ}=-55°C
T_{VJ}=25°C
650
6


725
1500
1200
900
600
625
525
425
T_{VJ}=25°C
T_{VJ}=-55°C


11
5.0
V_{DS}=20V
I_{DS} = 3.5mA


0
0
T_{VJ} = 25 °C
V_{GS}=-5V
V_{GS}=-3V
V_{GS}=0V
V_{GS}=15V
V_{GS}=18V
V_{DS}(V)
I_{DS}(A)



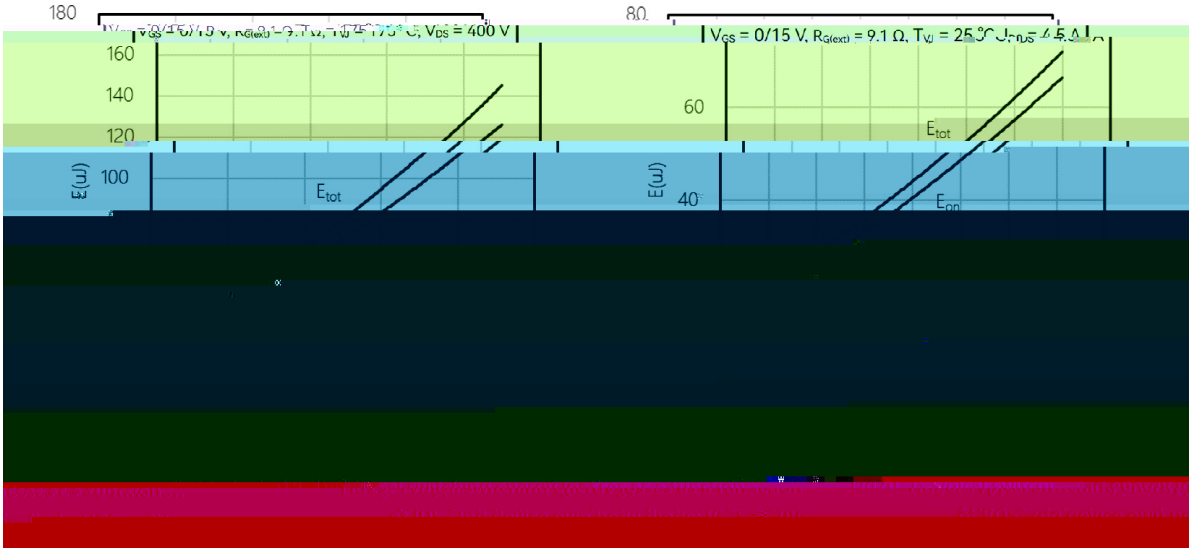




18. Typical switching energy losses as a function of IDS. 2nd device own body diode: VGS = 0V.

Fig17. Typical switching energy losses as a function of gate resistance. 2nd device own body diode: VGS = 0V.

Fig



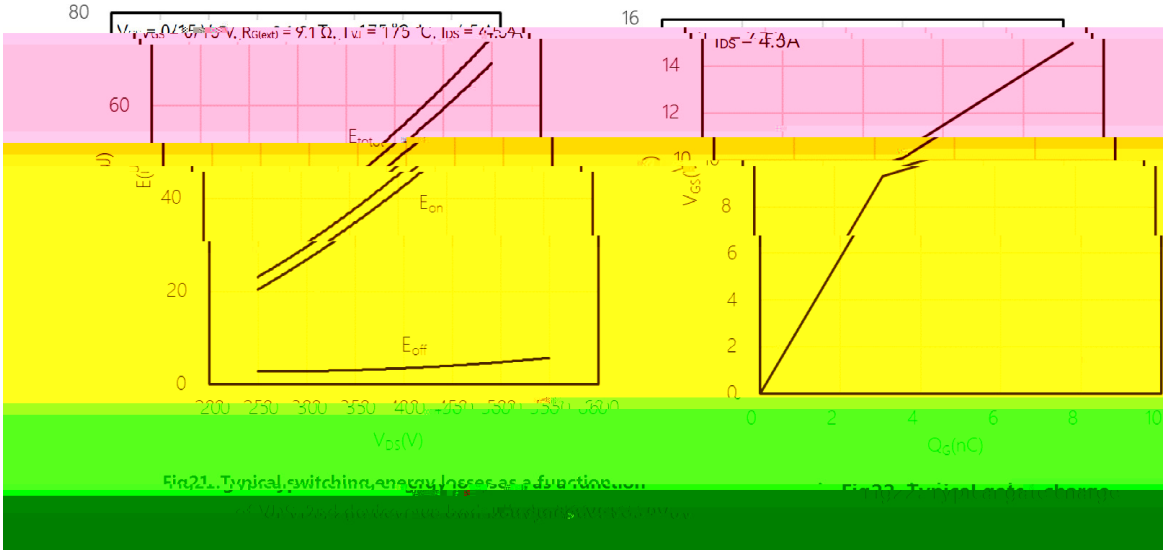


Fig21. Typical switching energy losses as a function of

Fig22. Typical gate charge

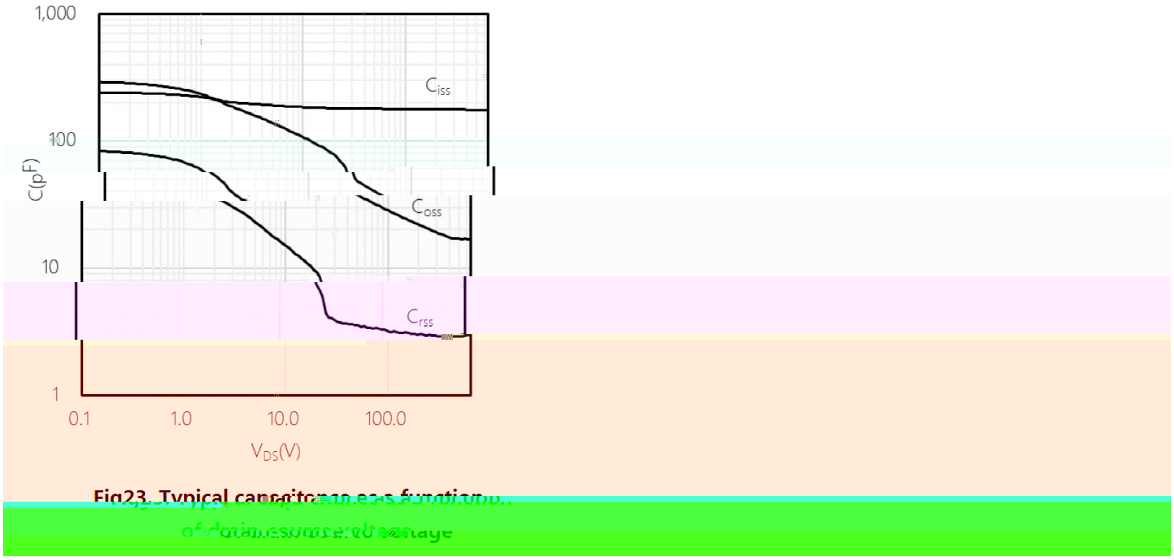
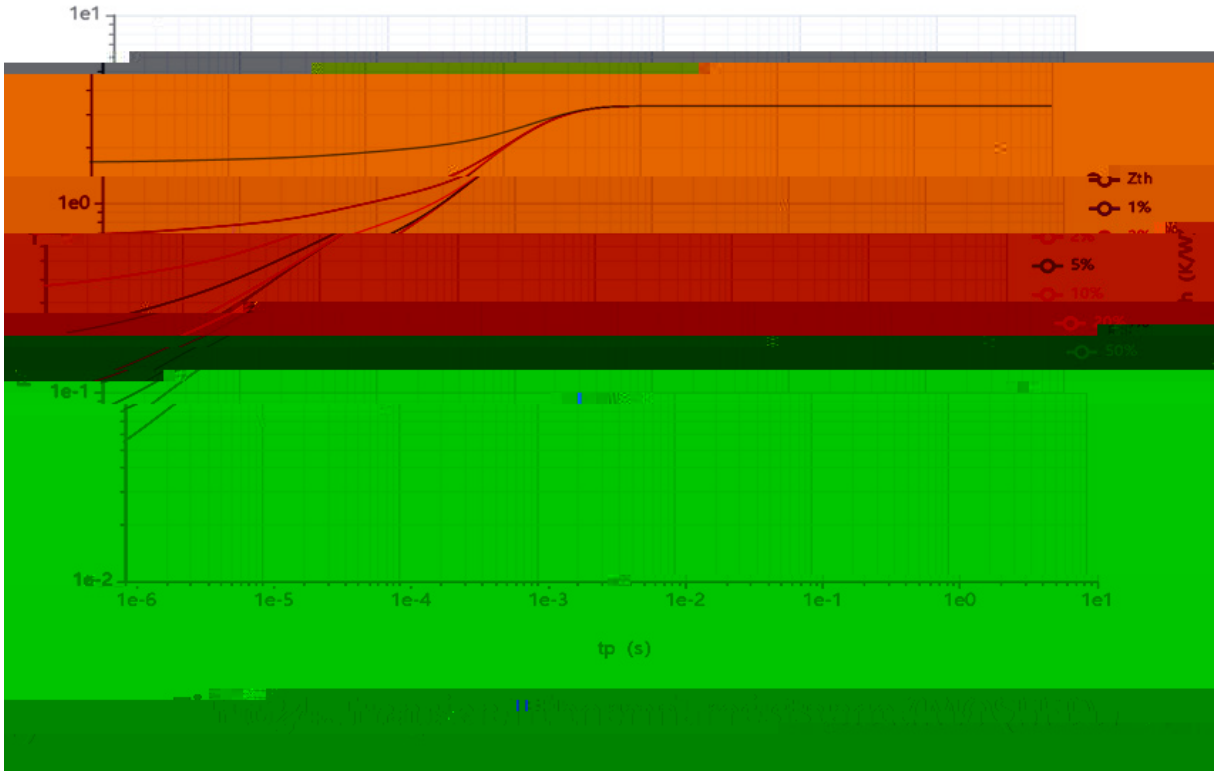
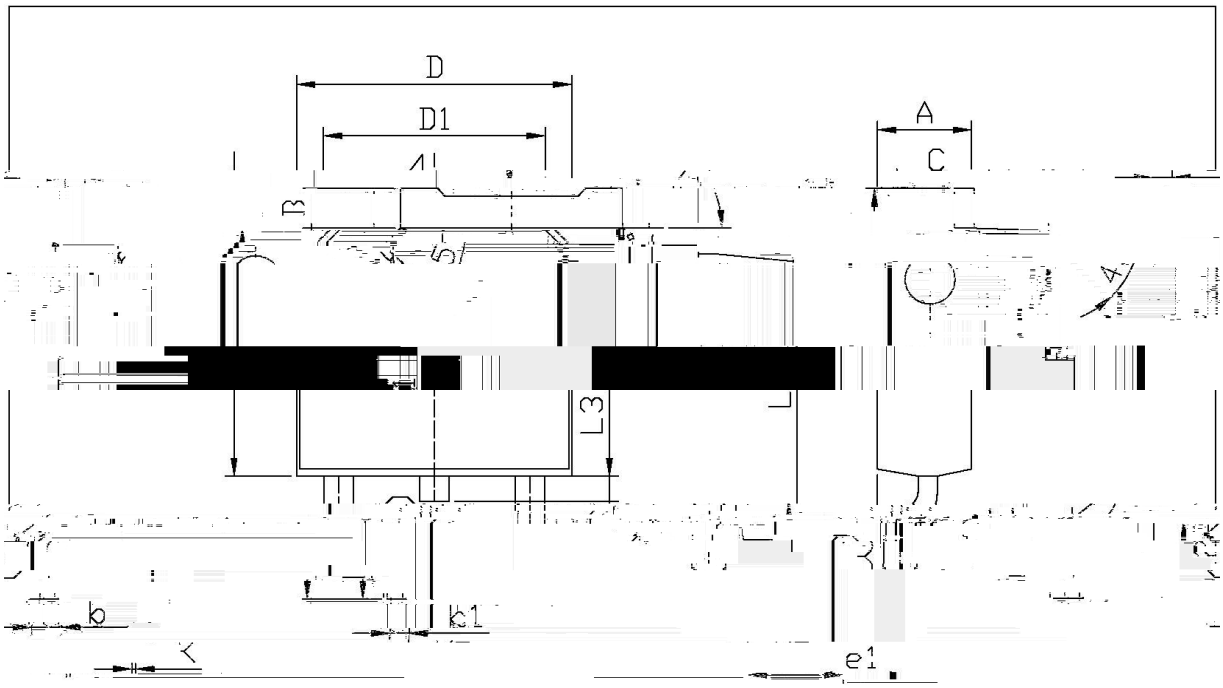


Fig23. Typical capacitances as a function of drain-source voltage

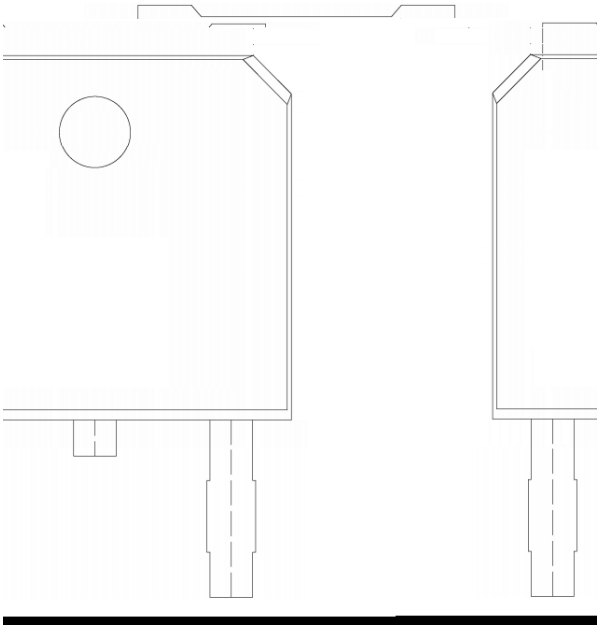

1e1
1e0
1e-1
1e-2
1e-6
1e-5
1e-4
1e-3
1e-2
1e-1
1e0
1e1
tp (s)
Zth
1%
5%
10%
20%
50%



单位：mm

Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min.	Max.		Min.	Max.
A	2.10	2.40	L	5.33	5.60
B	0.95	1.25	e1	2.24	2.48
b	0.70	0.90	c2	1.42	1.68
b1	0.65	0.85	c	0.45	0.55
D	6.00	6.20	D1	5.10	5.50
E	6.50	6.75	L3	0.60	0.90
e	4.58	4.62	K	0.00	0.10

TO-252



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.

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

/ REEL 1