TO-220F SiC N MOS

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

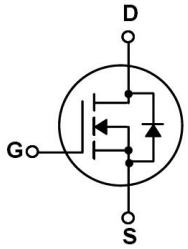
V_{DS}=800V I_D=20A

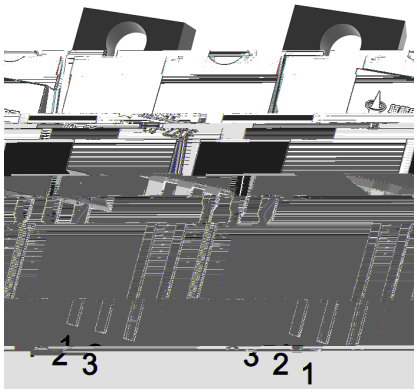
$R_{DS(on)}$@15V≤208mΩ(Type.160mΩ)

$R_{DS(on)}$@18V≤180mΩ(Type.124mΩ)

LED PD PC

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



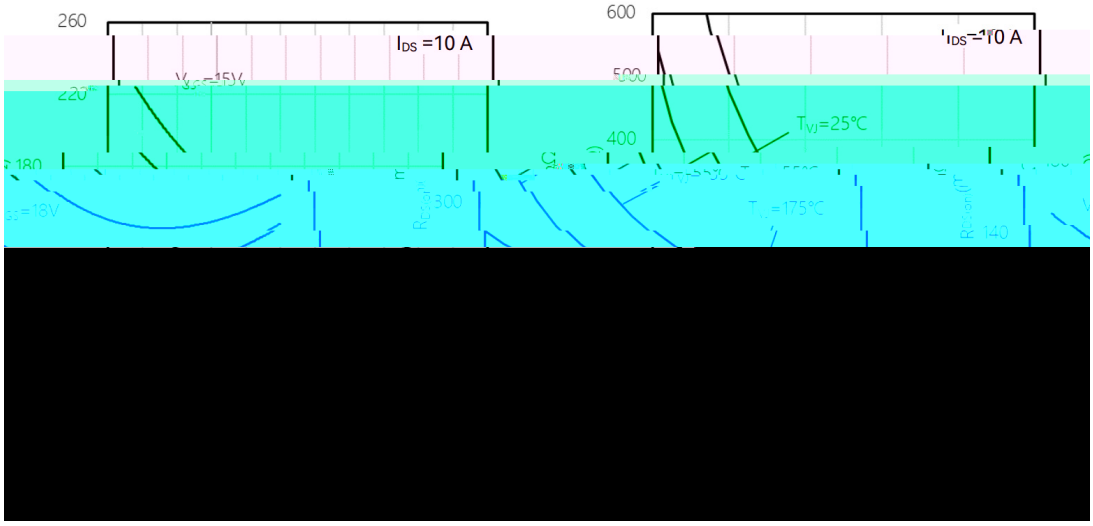


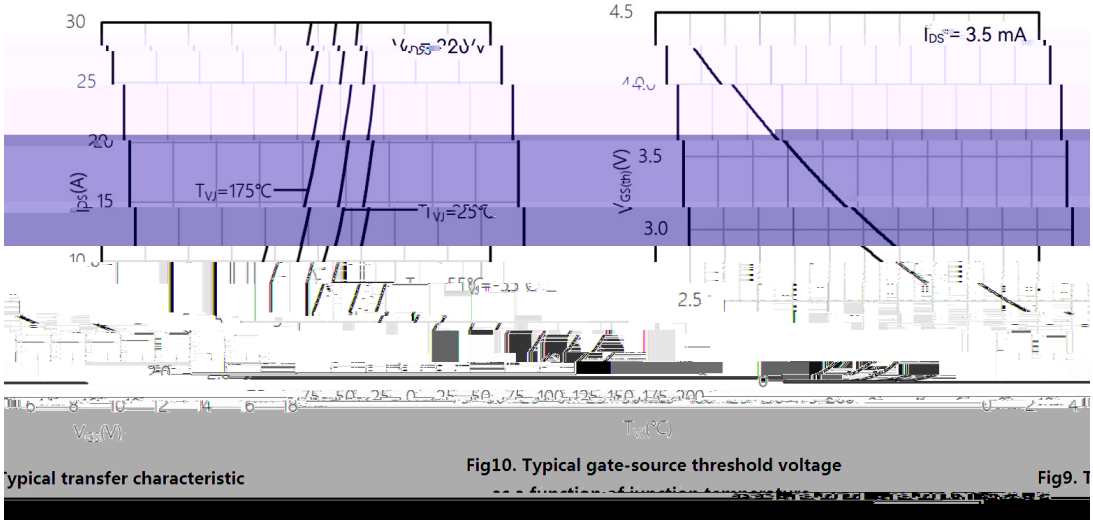
PIN1 G PIN 2 D PIN 3 S

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)	20	A
	I_D(Tc=100)	14.4	A
Peak Drain Current, tp Limited by $T_{VJ(max)}$	I_{DM}	34.5	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}	28	mJ
Power Dissipation or $R_{th(j-c,typ.)}$	P_D(Tc=25)	35	W
Operating and Storage Temperature Range	T_{VJ},T_{STG}	-55 to 175	
MOSFET/Body Diode Junction-Case Thermal Resistance	$R_{th(j-c)}$	4.3	/W

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V I_D=1m A	800			V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS} I_D=3.5mA	3		5	V
Drain-Source Leakage Current	I_{DSS}	V_{DS}=800V V_{GS}=0V		0.1	20	μA
Gate-Source Leakage Current	I_{GSS}	V_{GS}=22V V_{DS}=0V			250	nA
Source-Gate Leakage Current	I_{SGS}	V_{GS}=-10V V_{DS}=0V			250	nA
Drain-Source On-State Resistance	$R_{DS(on)}$	V_{GS}=15V I_D=10A		160	208	mΩ
		V_{GS}=15V I_D=10A T_{VJ}=175		164		
		V_{GS}=18V I_D=10A		124	180	
		V_{GS}=18V I_D=10A T_{VJ}=175		150		
Body Diode Forward Voltage	V_{SD}	V_{GS}=0V I_S=5A		3.5		V
Continuous DC Source Current	I_S			17		A
Peak Reverse Drain Current,	I_{SM}			32		A
Reverse Recovery Time	t_{rr}	V_{GS} = 0V, I_{SD}=10A, V_R=400V, di/dt=1.5kA/us		6.9		ns
Reverse Recovery Charge	Q_{rr}			26		nC
Peak Reverse Recovery Current	I_{rrm}			4.8		A
Reverse Recovery Energy	E_{rr}			0.24		μJ

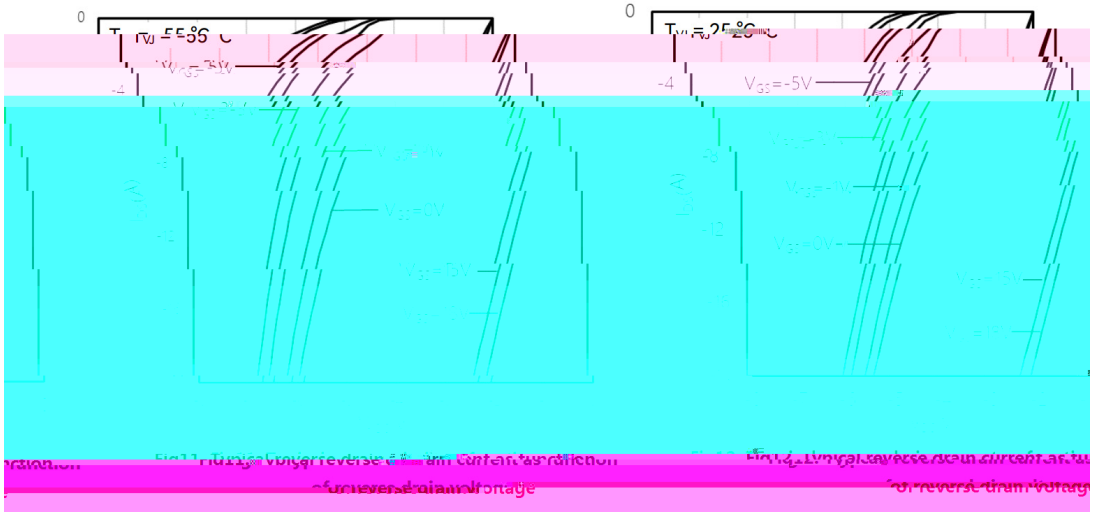


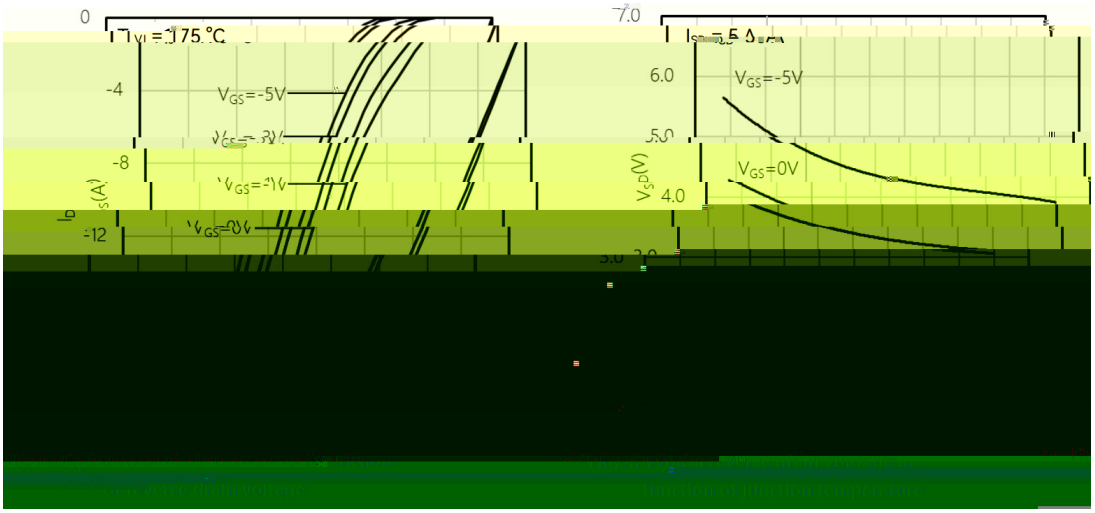


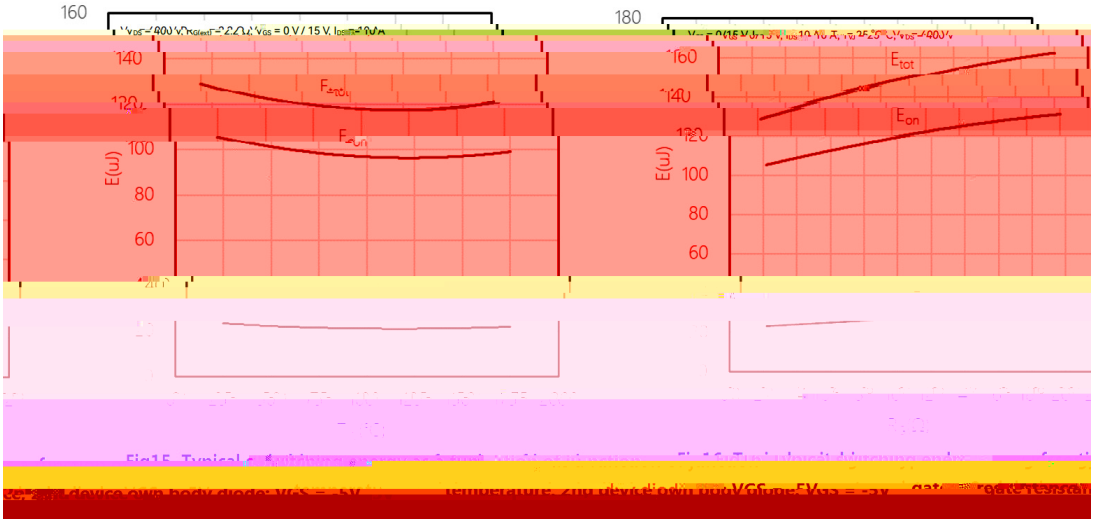
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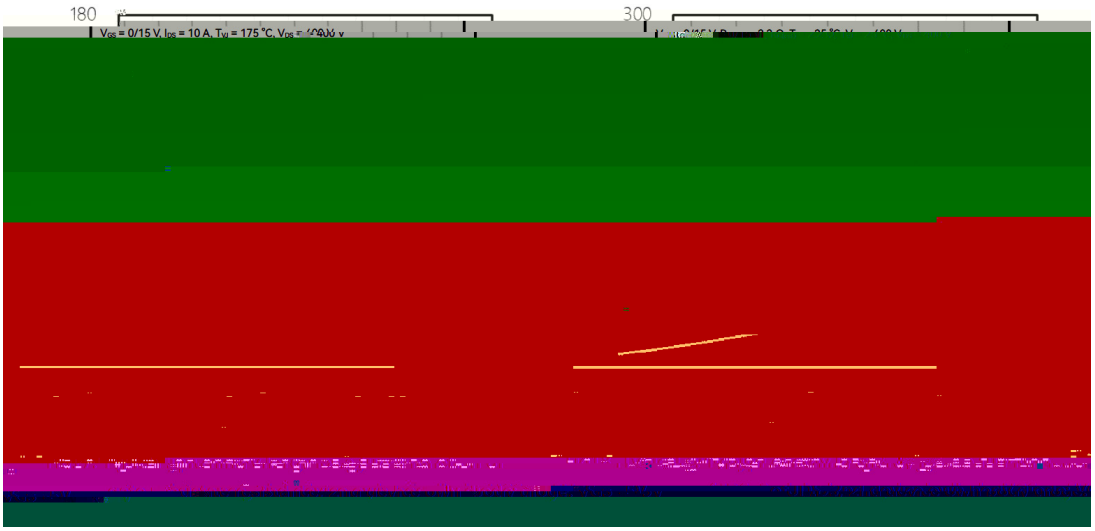
Fig10. Typical gate-source threshold voltage

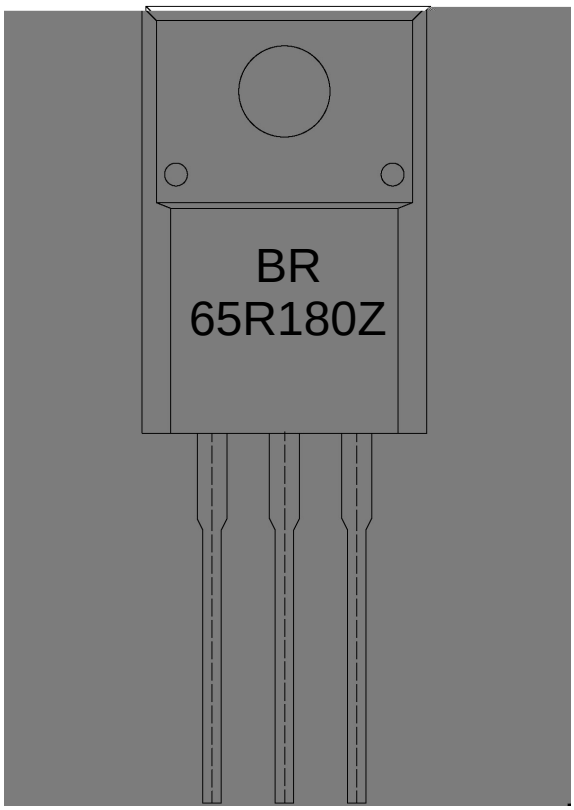
Fig9. T




0
-4
-8
-12
V_{GS}=-5V
V_{GS}=-4V
V_{GS}=-3V
V_{GS}=-2V
I_D(A)
7.0
6.0
5.0
4.0
V_{GS}=-5V
V_{GS}=0V
V_{SD}(V)


160
140
120
100
80
60
E(uJ)
180
160
140
120
100
80
60
E(uJ)
E_{tot}
E_{on}


180
300



BR

65R180Z

SC

****

Note:

BR:	Company Code
65R180Z:	Product Type Code
SC:	SiC
****:	Lot No. Code, code change with Lot No.