

/ Absolute Maximum Ratings($T_c=25^\circ\text{C}$)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	650	V
Drain Current	$I_D(T_c=25^\circ\text{C})$	11	A
	$I_D(T_c=175^\circ\text{C})$	9	A
Drain Current - Pulsed	I_{DM}	22	A
Gate-Source Voltage	V_{GS}	-10/+22	V
Recommended Operation Voltage of Gate to Source	V_{GSop}	0/+18	V
Power Dissipation	$P_D(T_c=25^\circ\text{C})$	52	W
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to 175	
Junction-to-Case	R_{JC}	2.88	/W

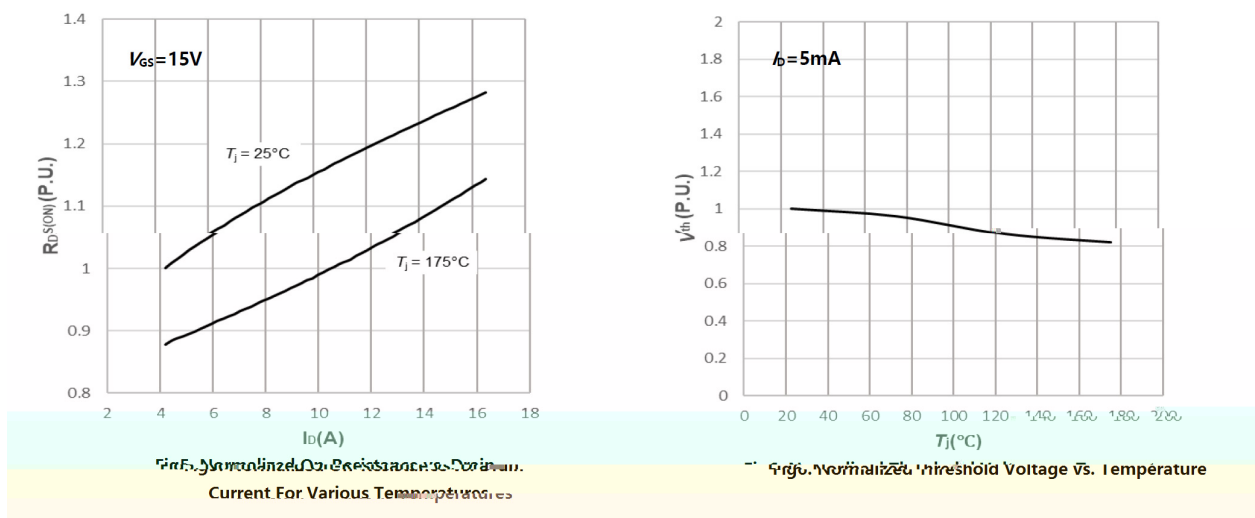
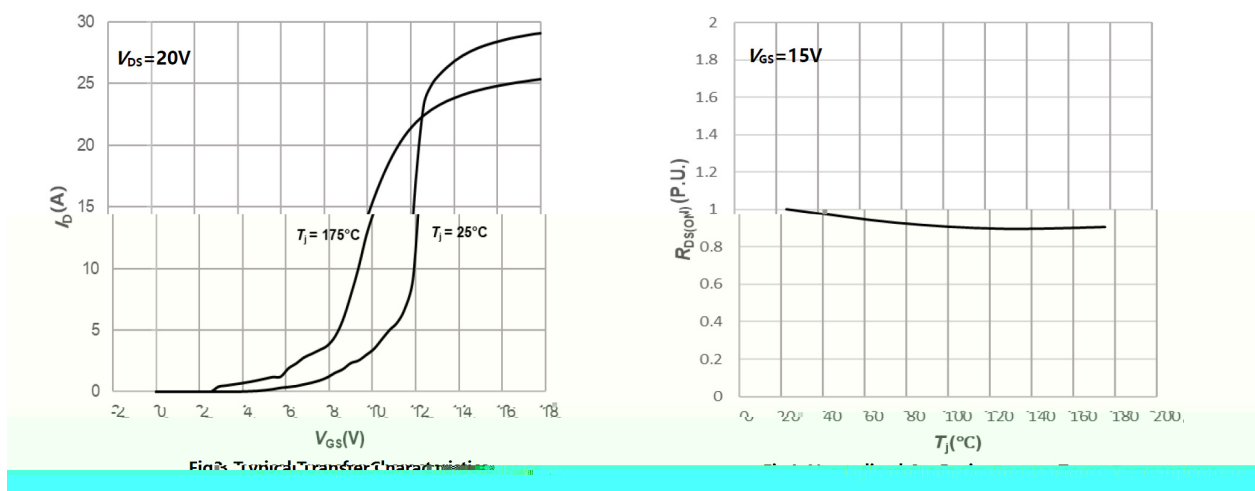
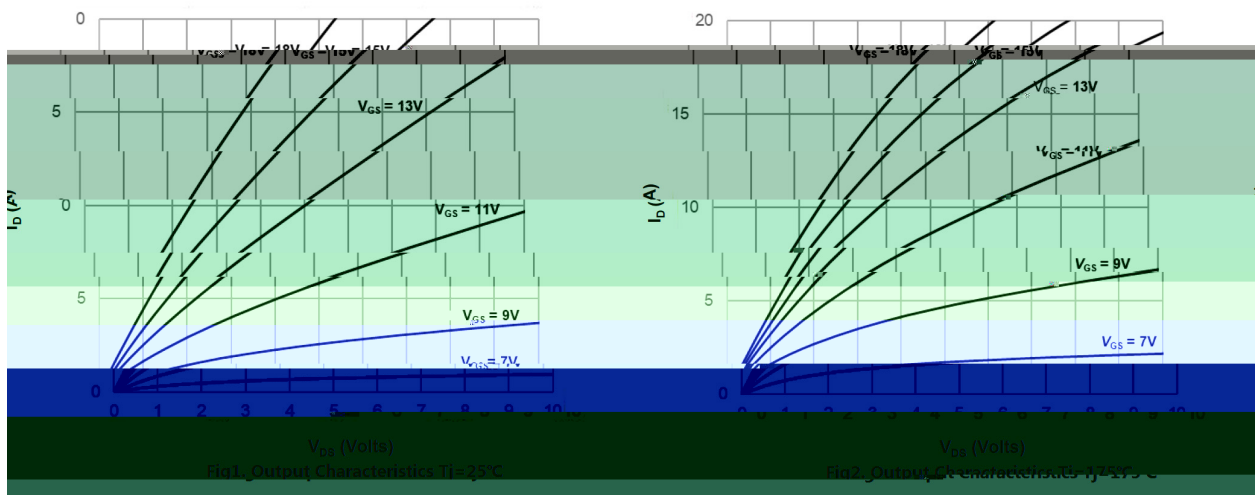
/ Electrical Characteristics($T_c=25^\circ\text{C}$)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DS}	$V_{GS}=0V$ $I_D=500\text{A}$	650			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=650V$ $V_{GS}=0V$			10	A
Gate-Body Leakage Current Forward	I_{GSS}	$V_{GS}=18V$ $V_{DS}=0V$			250	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=1.8mA$	2.7		4.5	V
Total gate charge	$R_{DS(on)}$	$V_{GS}=15V$ $I_D=4A$		350		m
		$V_{GS}=15V$ $I_D=5A$		380	500	
		$V_{GS}=15V$ $I_D=5A$ $T_J=175^\circ\text{C}$		325		
		$V_{GS}=18V$ $I_D=5A$		260		
		$V_{GS}=18V$ $I_D=5A$ $T_J=175^\circ\text{C}$		270		
Drain-Source Diode Forward Voltage	V_{SD}	$V_{GS}=0V$ $I_S=3A$		3.5		V
Continuous Diode Forward Current	I_S	$V_{GS}=0V$		11		A
Reverse Recovery Time	t_{rr}	$V_{GS}=0V$, $I_{SD}=5A$, $V_R=500V$, $di/dt=530A/\mu s$, $T_J=25^\circ\text{C}$		17.8		ns
Reverse Recovery Charge	Q_{rr}			33.7		nC
Peak Reverse Recovery Current	I_{rrm}			3.5		A

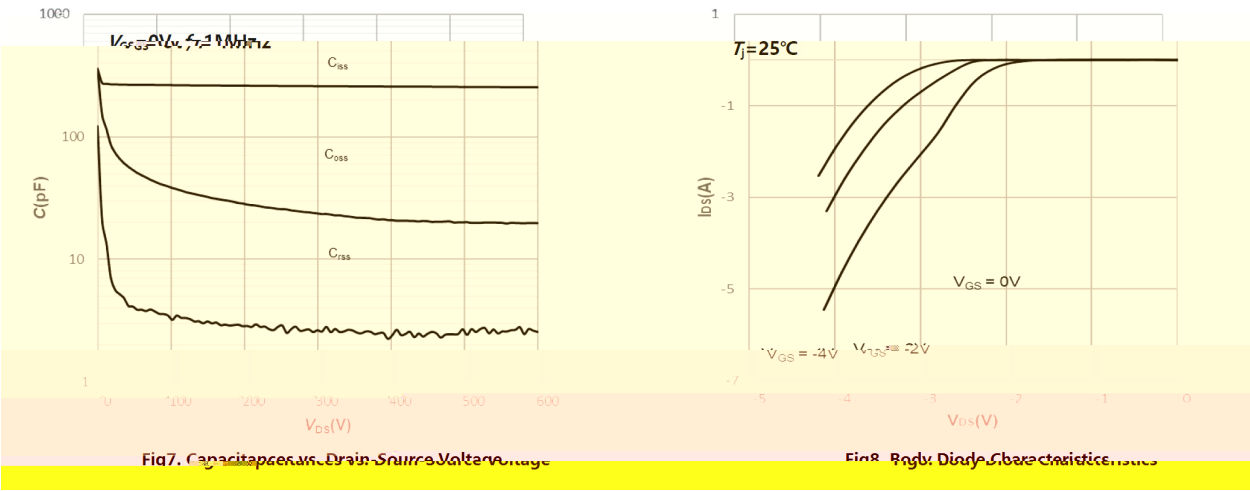
/ Electrical Characteristics(Tc=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Turn-On Delay Time	$t_{d(on)}$	$V_{GS}=0/15V$ $V_{DD}=500V$ $I_D=5A$ $R_g=10\Omega$		24		ns
Turn-On Rise Time	t_r			42		
Turn-Off Delay Time	$t_{d(off)}$			26.8		
Turn-Off Fall Time	t_f			76		
Gate resistance	R_g	$V_{AC}=25mV$ $f=1MHz$		14.3		
Input Capacitance	C_{iss}	$V_{DS}=500V$ $V_{GS}=0V$ $f=1MHz$		254		pF
Output Capacitance	C_{oss}			20.2		
Reverse Transfer Capacitance	C_{rss}			2.4		
Total Gate Charge	Q_g	$V_{GS}=0/15V,$ $V_{DS}=500V,$ $I_D=5A$		21.3		nC
Gate Source Charge	Q_{gs}			6.7		
Gate Drain Charge	Q_{gd}			11.5		

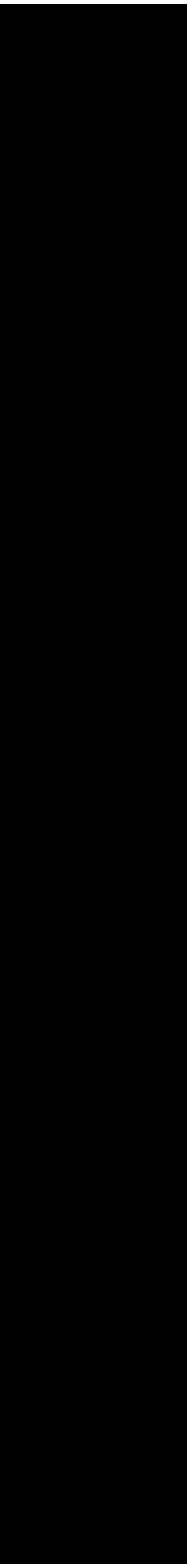
/ Electrical Characteristic Curve



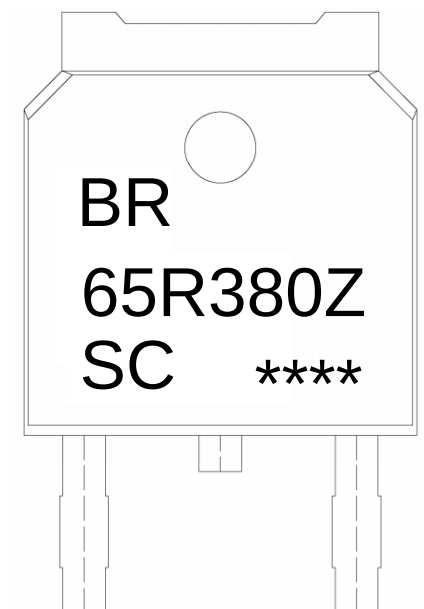
/ Electrical Characteristic Curve



/ Package Dimensions



/ Marking Instructions



BR

65R380Z

SC

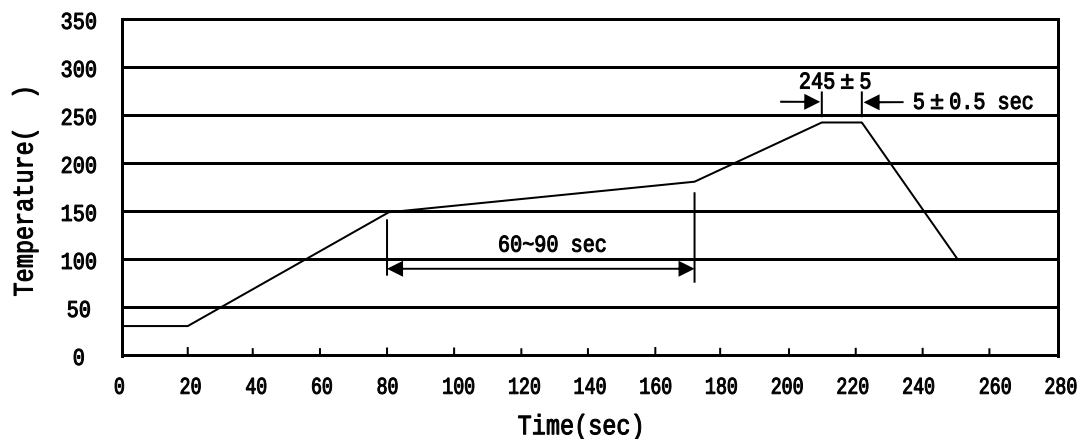
Note:

BR: Company Code

65R380Z: Product Type Code

SC: SiC

****: Lot No. Code, code change with Lot No.


() / 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. |

/ Resistance to Soldering Heat Test Conditions

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

/ Packaging SPEC.
/ REEL

Package Type	Units					Dimension (unit mm ³)		
	Units/Reel	Reels/Inner Box	Units/Inner Box	Inner Boxes/Outer Box	Units/Outer Box	Reel	Inner Box	Outer Box
TO-252	2,500	2	5,000	6	30,000	13 ×16	360×360×50	380×335×366

/ TUBE

Package Type	Units					Dimension (unit mm ³)		
	Units/Tube	Tubes/Inner Box	Units/Inner Box	Inner Boxes/Outer Box	Units/Outer Box	Tube	Inner Box	Outer Box
TO-251/252	75	48	3,600	5	18,000	526×20.5×5.25	555×164×50	575×290×180

/ Notices

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