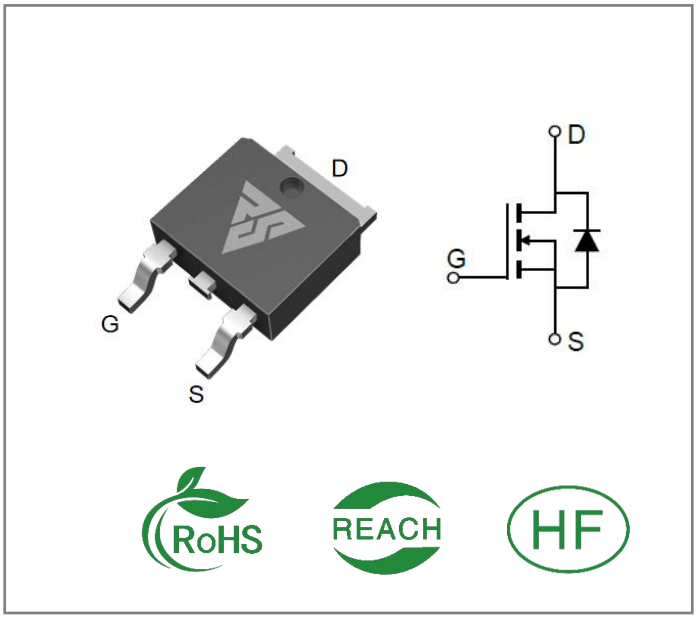
V_{DS}	$R_{DS(on)Typ}$	I_D@25℃
800V	260mΩ	16A



Applications:

- Switch Mode Power Supplies
- High Voltage DC/DC Converters
- Battery Chargers
- Motor Drives
- Pulsed Power Applications

Features:

- Wide Bandgap SiC MOSFET Technology
- Low On-Resistance with High Blocking Voltage
- Low Capacitances with High-Speed Switching
- Low Reverse Recovery (Qrr)
- Easy to Parallel and Simple to Drive
- Robust against Parasitic Turn on Even 0V Turn off Gate Voltage

Benefits:

- Reduced Switching Losses
- Increased System Switching Frequency
- Increased Power Density
- Reduction of Heat Sink Requirements
- Reduced EMI

Ordering Information

Part Number	Package	Marking	Packing	Qty.
RSM080260D	TO-252	RSM080260D	Tape&reel	2500 PCS

Maximum Ratings (TJ= 25℃ unless otherwise specified)

Symbol	Parameter	Value	Unit	Test Conditions
V_{DS}	Drain - Source Voltage	800	V	V_{GS}=0V,I_D=250μA
V_{GS}	Gate - Source Voltage	-10/+22	V	Absolute maximum values
V_{GSOP}	Recommended Operation Voltage of Gate to Source	0/+18	V	Recommended operational values
I_D	Continuous Drain Current	16 12	A	V_{GS}=15V, T_C =25℃ V_{GS}=15V, T_C =100℃
I_{DM}	Pulsed Drain Current	32	A	V_{GS}=15V, T_C =25℃
P_D	Power Dissipation	77	W	T_C =25℃, T_J =175℃
T_J, T_{stg}	Operating Junction and StorageTemperature	-55 to + 175	℃	

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Electrical Characteristics (TJ= 25℃ unless otherwise specified)

Symbol	Parameter	Min.	Typ.	Max.	Unit	Test Conditions	Note
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	800			V	V_{GS}=0V,I_D=250μA	
$V_{GS(th)}$	Gate Threshold Voltage	2.7	3.6	4.5	V	V_{GS}= V_{DS}, I_D=6mA	
I_{DSS}	Zero Gate Voltage Drain Current			10	μA	V_{DS}=800V, V_{GS}=0V	
I_{GSS}	Gate-Source Leakage Current			250	nA	V_{GS}=18V, V_{DS}=0V	
$R_{DS(on)}$	Drain-Source on-state Resistance		260	325	mΩ	V_{GS}=15V, I_D =6.5A	
			190	260		V_{GS}=18V, I_D =6.5A	
C_{iss}	Input Capacitance		402		pF	V_{GS}=0V, V_{DS}=50V f=1MHz,T_j=25℃	
C_{oss}	Output Capacitance		87				
C_{rss}	Reverse Transfer Capacitance		8.3				
R_G	Gate Resistance		2.7		Ω	f=1 MHz, V_{AC}=25mV	
Q_g	Total Gate Charge		25		nC	V_{DS}=500V V_{GS}=0/+15V I_D=6.5A,T_j=25℃	
Q_{gs}	Gate to Source Charge		11				
Q_{gd}	Gate to Drain Charge		9				
$t_{d(on)}$	Turn-On Delay Time		14		ns	V_{DD}=500V V_{GS} =0/15V I_D=6.5A $R_{G(ext)}$=2Ω	
t_r	Rise Time		43				
$t_{d(off)}$	Turn-Off Delay Time		19				
t_f	Fall Time		43				

Reverse Diode Characteristics (TJ= 25℃ unless otherwise specified)

Symbol	Parameter	Typ.	Max	Unit	Test Conditions	Note
V_{SD}	Diode Forward Voltage	3.3		V	V_{GS}=0V, I_{SD} =3.5A T_j=25℃	
I_S	Continuous Diode Forward Current	3.5		A	V_{GS}=0V,T_j= 25℃	
t_{rr}	Reverse Recovery time	11		ns	V_{GS}=0V,I_{SD}=6.5A V_R=500V,T_j=25℃ di/dt=900A/us	
Q_{rr}	Reverse Recovery Charge	33		nC		
I_{rrm}	Peak Reverse Recovery Current	4.7		A		

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Thermal Characteristics (TJ= 25℃ unless otherwise specified)

Symbol	Parameter	Typ.	Max.	Unit	Test Conditions
$R_{\theta JC}$	Thermal Resistance from Junction to Case	1.93		℃/W	

Typical Feature Curve

Fig1.Output Characteristics Tj=25℃

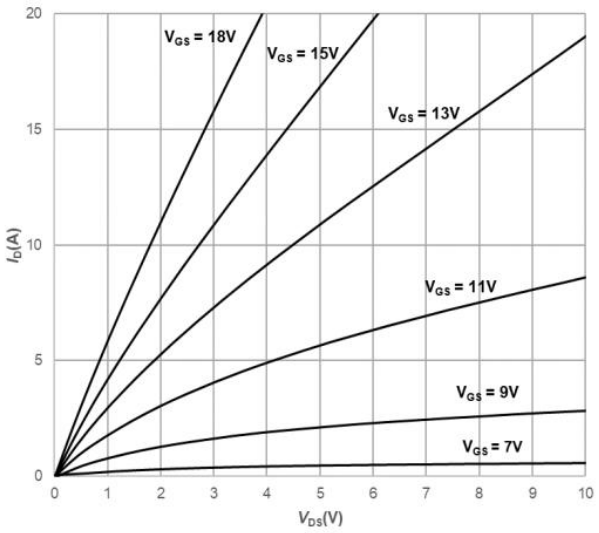

Fig2.Output Characteristics Tj=175℃

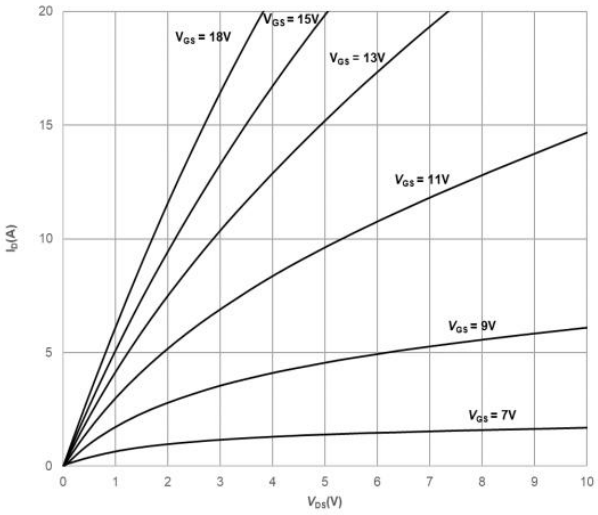

Fig3.Typical Transfer Characteristics

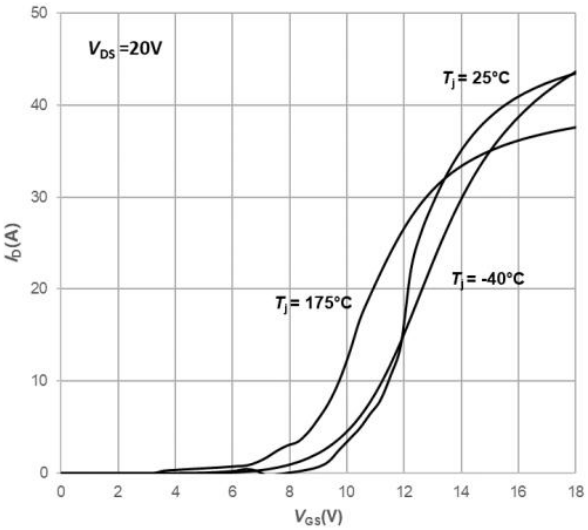

Fig4.Normalized On-Resistance vs. Temperature

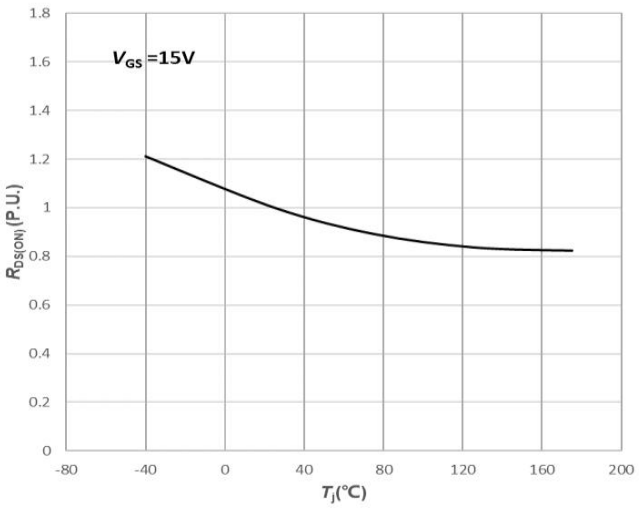

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Fig5.Normalized On-Resistance vs. Drain Current For Various Temperatures

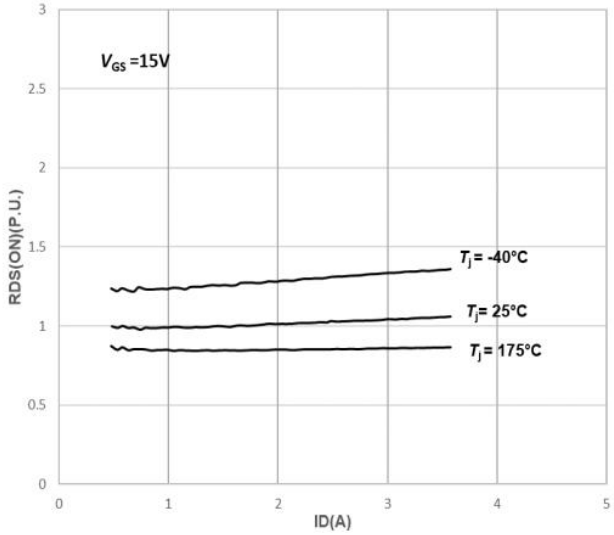


Fig6.Normalized Threshold Voltage vs. Temperature

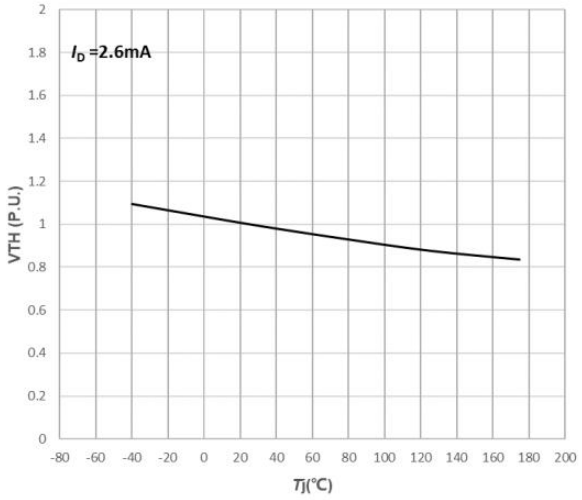


Fig7.Capacitances vs. Drain-Source Voltage (0-200V)

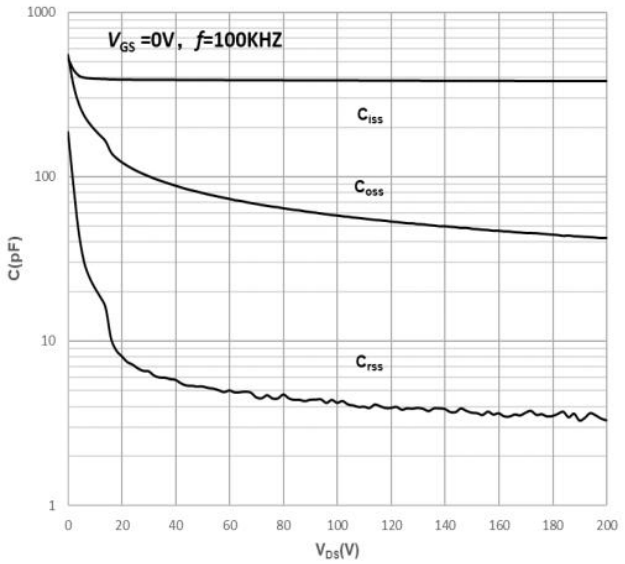


Fig8.Capacitances vs. Drain-Source Voltage (0-600V)

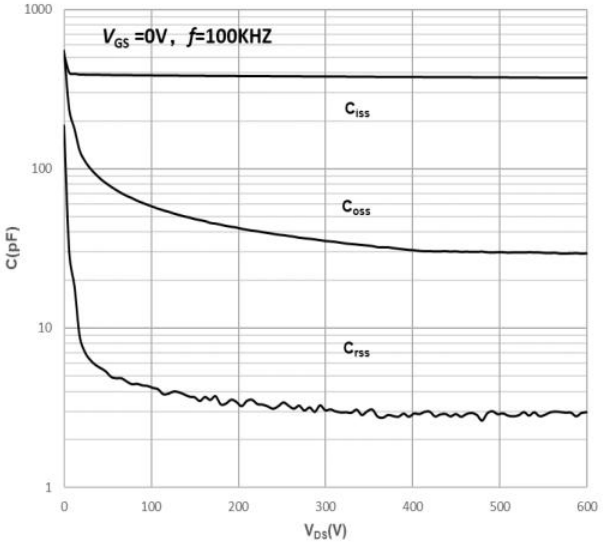
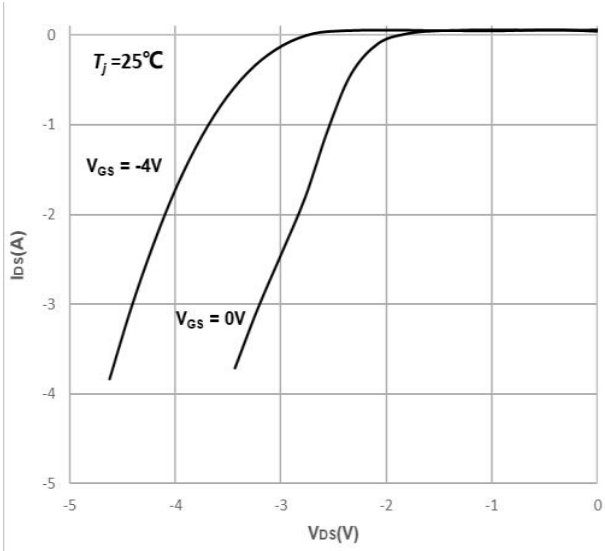


Fig9.Body Diode Characteristics



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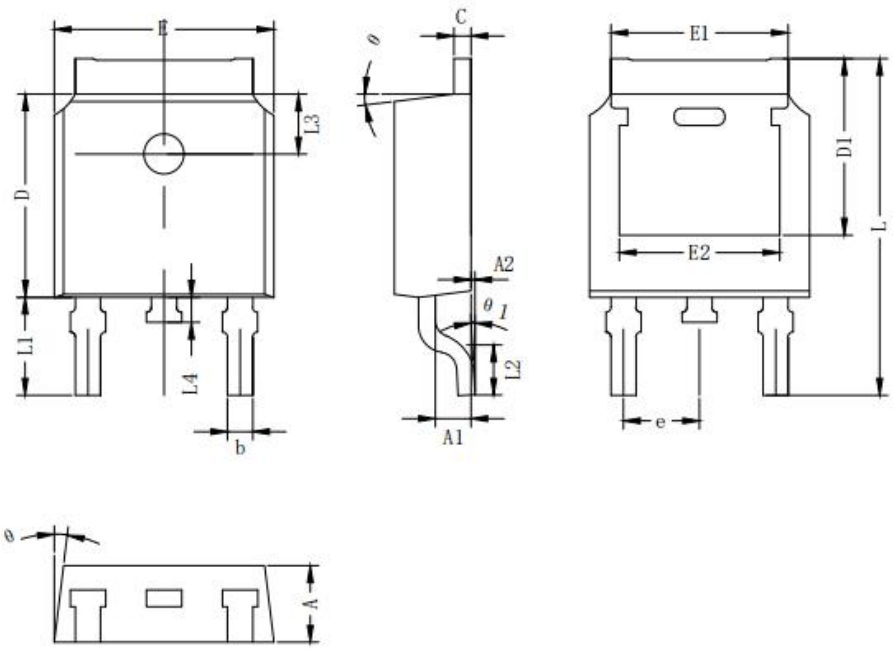
Package outline drawing(TO-252 Unit: mm)



SYMBOL	MIN	NOM	MAX
A	2.10	2.30	2.50
A1	0.97	1.07	1.17
A2	0.00	–	0.12
b	0.66	0.76	0.86
c	0.45	0.51	0.60
D	5.90	6.10	6.30
D1	5.10	5.30	5.45
E	6.40	6.60	6.80
E1	5.10	5.33	5.45
E2	4.63	4.83	5.03
L	9.90	10.10	10.30
L1	2.74	2.94	3.14
L2	1.40	1.50	1.70
L3	1.65	1.80	1.95
L4	0.60	0.80	1.00
e	2.286BSC		
θ	5°	7°	10°
θ1	0°	–	3°

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