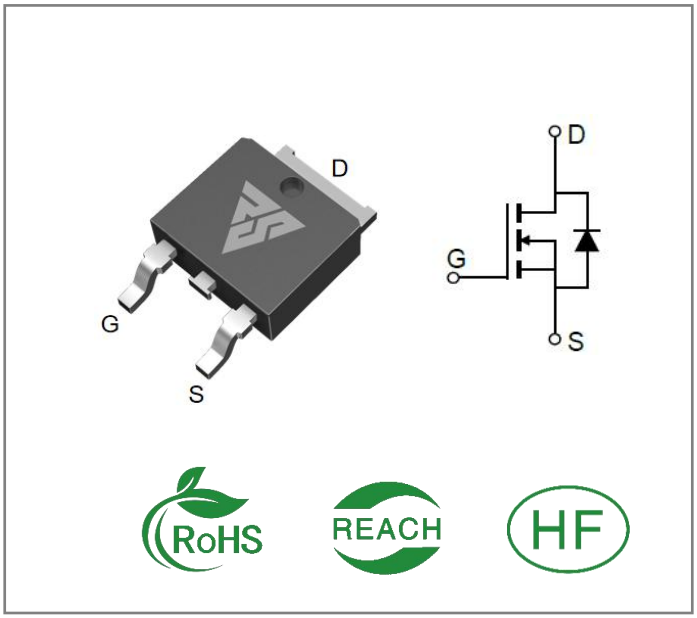
V_{DS}	$R_{DS(on)Typ}$	$I_{D@25℃}$
800V	1000mΩ	4.8A



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)
- 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.
RSM0801K0D	TO-252	RSM0801K0D	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=500μA
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	4.8	A	V_{GS}=15V,T_C =25℃
I_{DM}	Pulsed Drain Current	10	A	V_{GS}=15V,T_C =25℃
P_D	Power Dissipation	47	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
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	800			V	V_{GS}=0V,I_D=500μA
$V_{GS(th)}$	Gate Threshold Voltage	2.7		4.5	V	V_{GS}= V_{DS},I_D=0.65mA
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		1000	1250	mΩ	V_{GS}=15V, I_D =1.8A
			773			V_{GS}=15V, I_D =1.8A T_j=175℃
			670			V_{GS}=18V, I_D =1.8A
			626			V_{GS}=18V, I_D =1.8A T_j=175℃
C_{iss}	Input Capacitance		125		pF	V_{GS}=0V, V_{DS}=500V f=100KHz,T_j=25℃
C_{oss}	Output Capacitance		11			
C_{rss}	Reverse Transfer Capacitance		1.2			
R_G	Gate Resistance		11.8		Ω	f=1 MHz, V_{AC}=25mV
Q_g	Total Gate Charge		16.5		nC	V_{DS}=500V V_{GS}=0/+15V I_D=2A
Q_{gs}	Gate to Source Charge		6.5			
Q_{gd}	Gate to Drain Charge		3.6			
$t_{d(on)}$	Turn-On Delay Time		11		ns	V_{DD}=500V V_{GS} =0/18V I_D=2A $R_{G(ext)}$=2Ω
t_r	Rise Time		37			
$t_{d(off)}$	Turn-Off Delay Time		24			
t_f	Fall Time		108			

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

Symbol	Parameter	Typ.	Max	Unit	Test Conditions	Note
V_{SD}	Diode Forward Voltage	3.5		V	V_{GS}=0V, I_{SD} =1.1A	
I_S	Continuous Diode Forward Current	4.8		A	V_{GS}=0V,T_j= 25℃	
t_{rr}	Reverse Recovery time	11		ns	V_{GS}=0V,I_{SD}=2A V_R=500V,T_j=25℃ di/dt=465A/us	
Q_{rr}	Reverse Recovery Charge	17		nC		
I_{rrm}	Peak Reverse Recovery Current	2.8		A		

Thermal Characteristics (TJ= 25℃ unless otherwise specified)

Symbol	Parameter	Typ.	Max.	Unit	Test Conditions
$R_{\theta JC}$	Thermal Resistance from Junction to Case	3.2		℃/W	

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Typical Feature Curve

Fig1 .Output Characteristics Tj =25℃

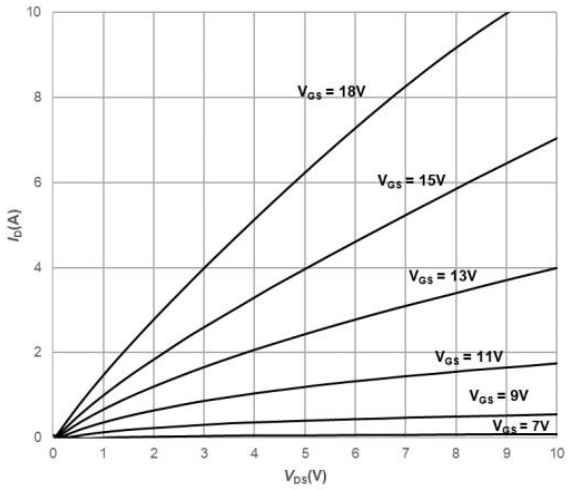

Fig2 .Output Characteristics Tj =175℃

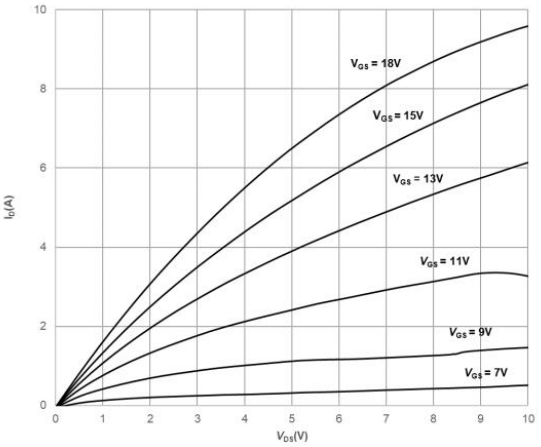

Fig3 .Typical Transfer Characteristics

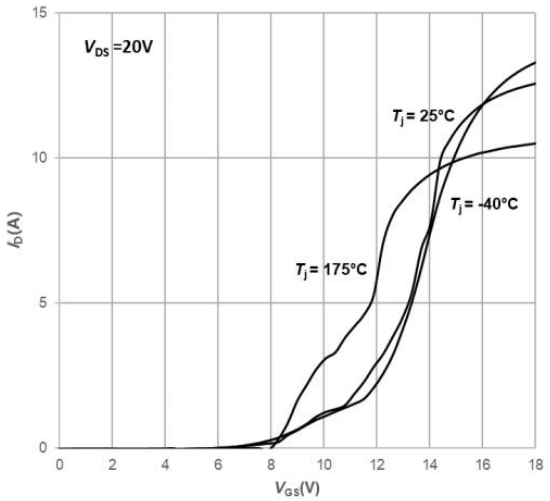

Fig4 . Normalized On-Resistance vs.Temperature

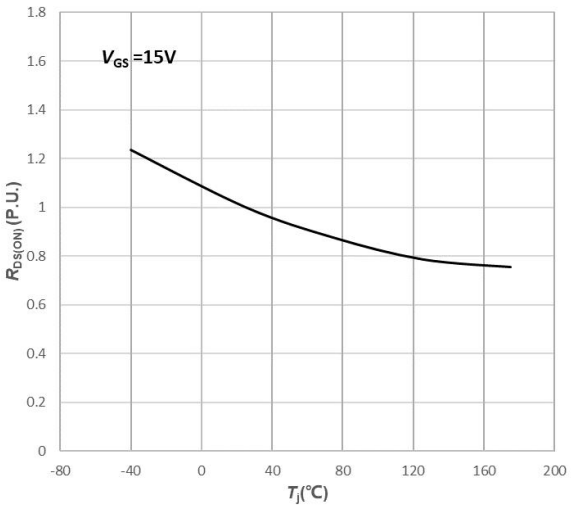

Fig5 . Normalized On-Resistance vs. Drain Current For Various Temperatures

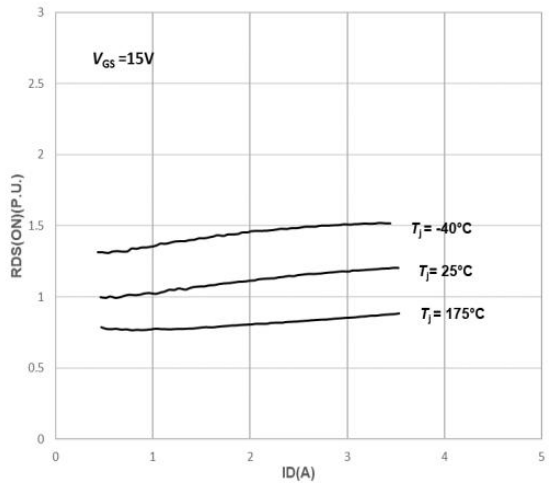

Fig6 . Normalized Threshold Voltage vs. Temperature

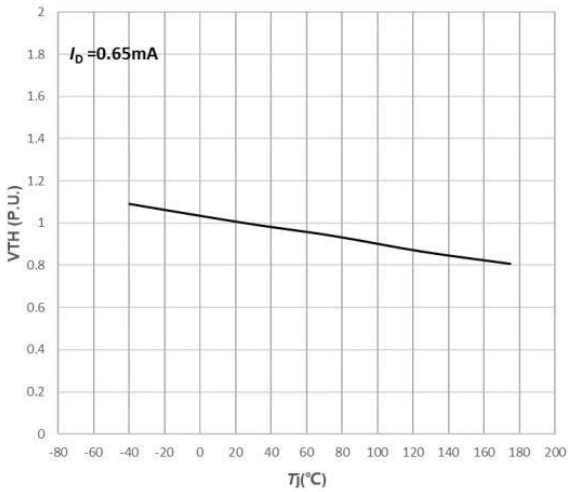

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Fig7 .Capacitances vs. Drain-Source Voltage (0-200V)

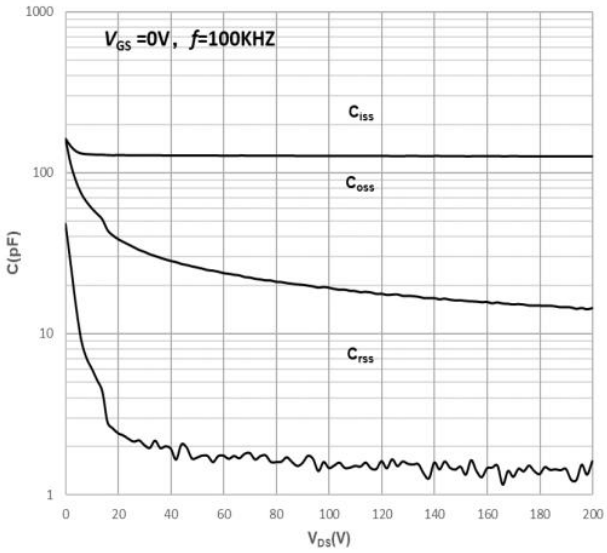


Fig8 .Capacitances vs. Drain-Source Voltage (0-600V)

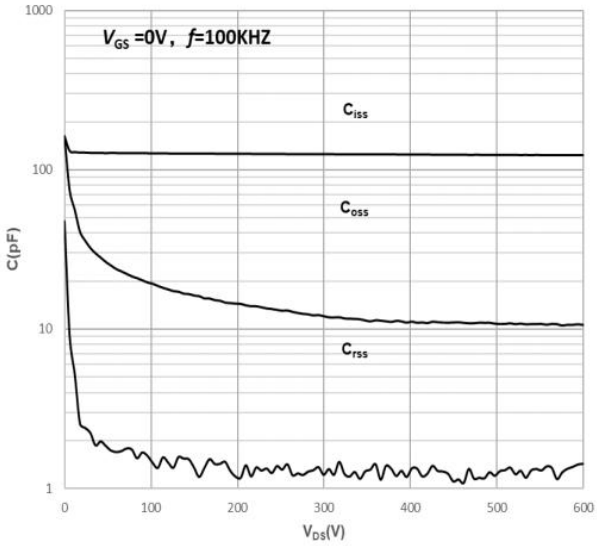
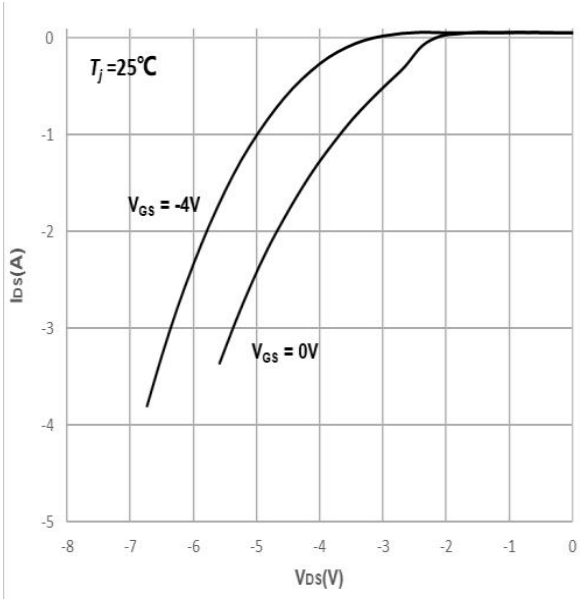


Fig9 .Body Diode Characteristics



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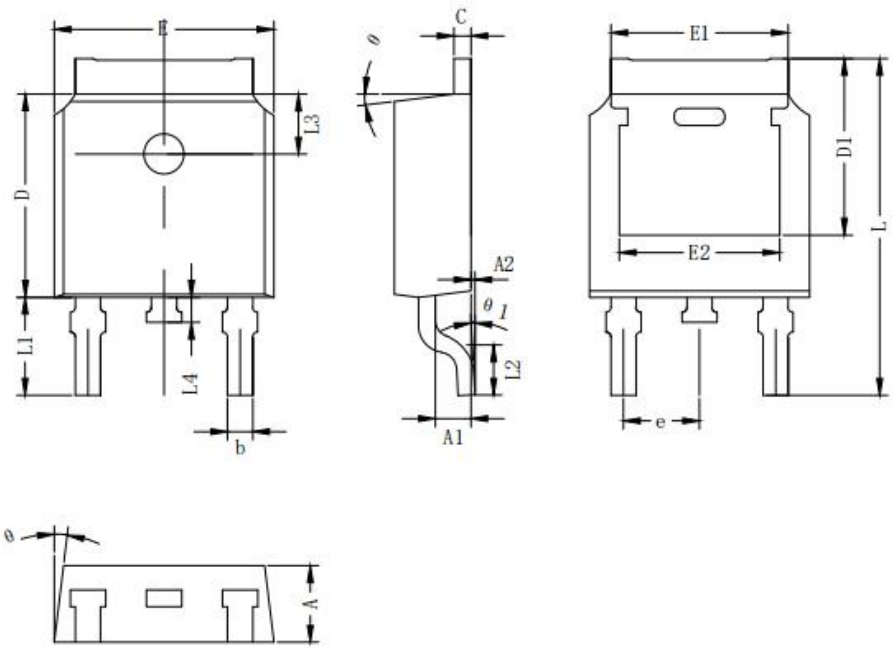
Package outline drawing(TO-252 Unit: mm)



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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