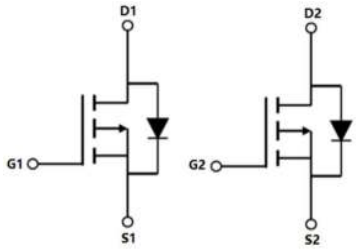
RECTRON SEMICONDUCTOR
TECHNICAL SPECIFICATION

RMD2P20S6

Dual P-Channel Enhancement Mosfet

Feature

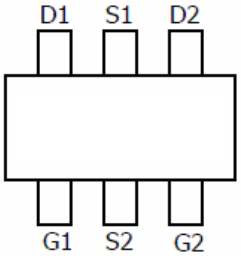
- -20V,2A
  $R_{DS(ON)}$ <125mΩ @V_{GS}=-4.5V TYP:95 mΩ
  $R_{DS(ON)}$ <190mΩ @V_{GS}=-2.5V TYP:135 mΩ
- Advanced Trench Technology
- Lead free product is acquired



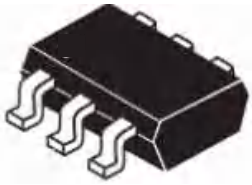
Schematic Diagram

Application

- Interfacing Switching
- Load Switching
- Power management
- Halogen-free



Pin Assignment



SOT-23-6L top view

Package Marking and Ordering Information

Device Marking	Device	Package	Packaging Code	Reel Size	Quantity(Pcs)	Carton(Pcs)
D2P20	RMD2P20S6	SOT-23-6L	-T	7inch	3000	120000

ABSOLUTE MAXIMUM RATINGS (T_J=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	-20	V
Gate-Source Voltage	V_{GS}	±12	V
Continuous Drain Current (T_a =25℃)	I_D	-2	A
Continuous Drain Current (T_a =70℃)	I_D	-1.3	A
Pulsed Drain Current	I_{DM}	-8	A
Power Dissipation	P_D	0.25	W
Thermal Resistance from Junction to Ambient(4)	$R_{\theta JA}$	500	℃/W
Junction Temperature	T_J	150	℃
Storage Temperature	T_{STG}	-55~ +150	℃

MOSFET ELECTRICAL CHARACTERISTICS(T_J=25℃ unless otherwise noted)

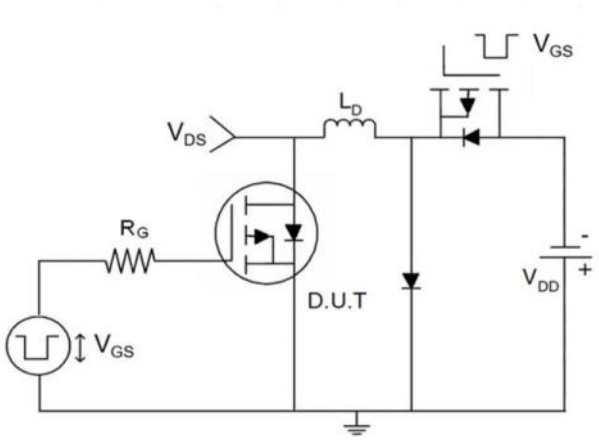
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static Characteristics						
Drain-source breakdown voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D =-250μA	-20	-	-	V
Zero gate voltage drain current	I_{DSS}	V_{DS} =-20V, V_{GS} = 0V	-	-	-1	μA
Gate-body leakage current	I_{GSS}	V_{GS} =±12,V_{DS} = 0V	-	-	±100	nA
Gate threshold voltage(3)	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =-250μA	-0.6	-	-1.0	V
Drain-source on-resistance(3)	$R_{DS(on)}$	V_{GS} =-4.5V, I_D =-2A	-	95	125	mΩ
		V_{GS} =-2.5V, I_D =-1A	-	135	190	
Dynamic characteristics						
Input Capacitance	C_{iss}	V_{DS} =-10V, V_{GS} =0V, f =1MHz	-	184	-	pF
Output Capacitance	C_{oss}		-	35	-	
Reverse Transfer Capacitance	C_{rss}		-	25	-	
Switching characteristics						
Turn-on delay time	$t_{d(on)}$	V_{DD}=-10V, I_D=-2A, V_{GS}=-4.5V, R_G=3Ω	-	10	-	ns
Turn-on rise time	t_r		-	30	-	
Turn-off delay time	$t_{d(off)}$		-	63	-	
Turn-off fall time	t_f		-	50	-	
Total Gate Charge	Qg	VDS=-10V, ID=-2A, VGS=-4.5V	-	2.2	-	nC
Gate-Source Charge	Qgs		-	0.5	-	
Gate-Drain Charge	Qgd		-	0.5	-	
Source-Drain Diode characteristics						
Diode Forward voltage(3)	V_{DS}	V_{GS} =0V, I_S=-2A	-	-	-1.2	V
Diode Forward current(4)	I_S		-	-	-2	A

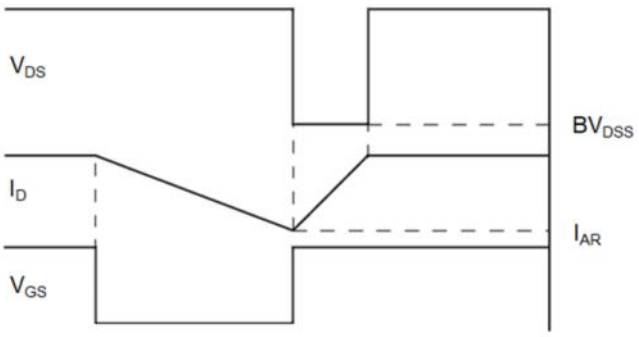
Notes:

1. Repetitive Rating: pulse width limited by maximum junction temperature
2. Pulse Test: pulse width≤300μs, duty cycle≤2%
3. Surface Mounted on FR4 Board,t≤10 sec

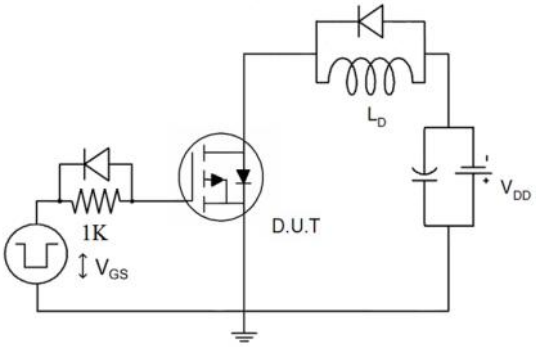
Test Circuit

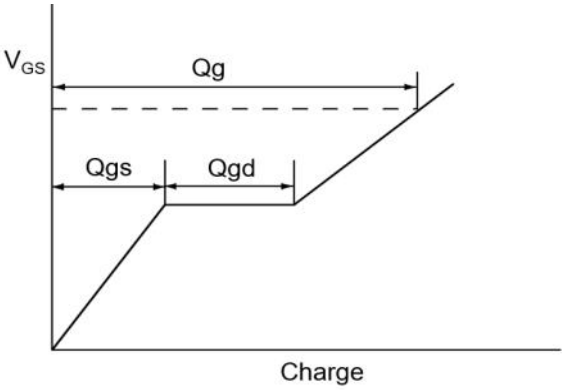
1) E_{AS} Test Circuits



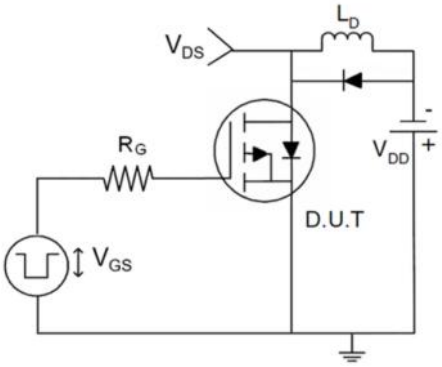


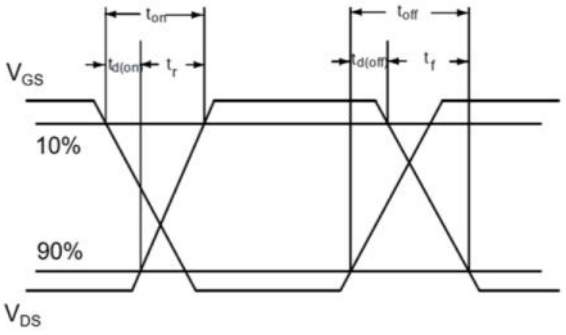
2) Gate Charge Test Circuit





3) Switch Time Test Circuit





RATING AND CHARACTERISTICS CURVES (RMD2P20S6)

Figure1: Output Characteristics

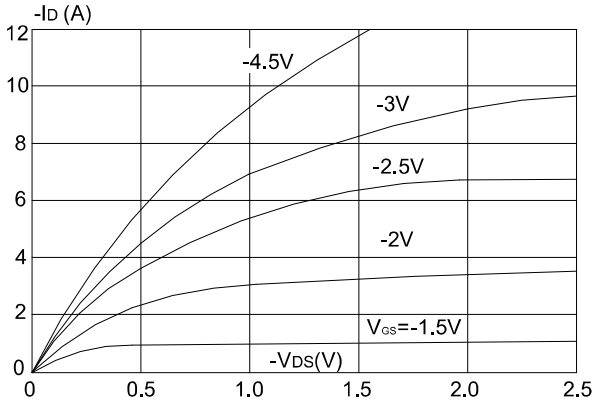


Figure 2: Typical Transfer Characteristics

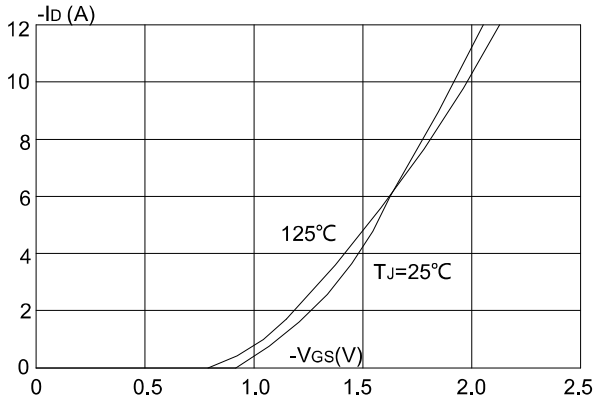


Figure 3: On-resistance vs. Drain Current

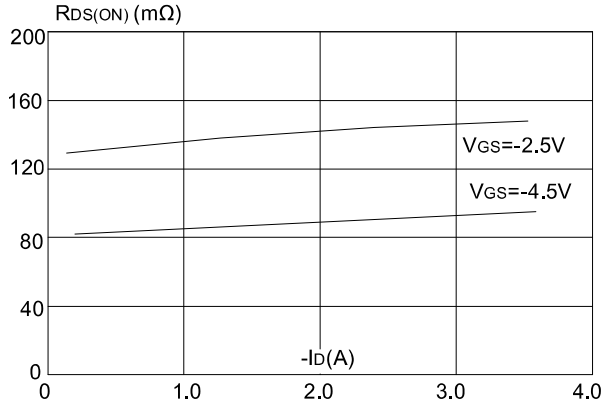


Figure 4: Body Diode Characteristics

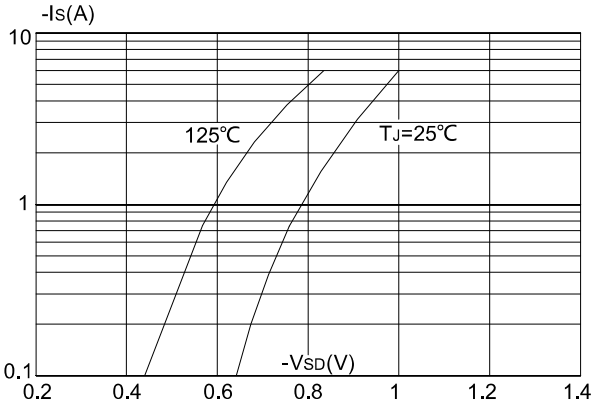


Figure 5: Gate Charge Characteristics

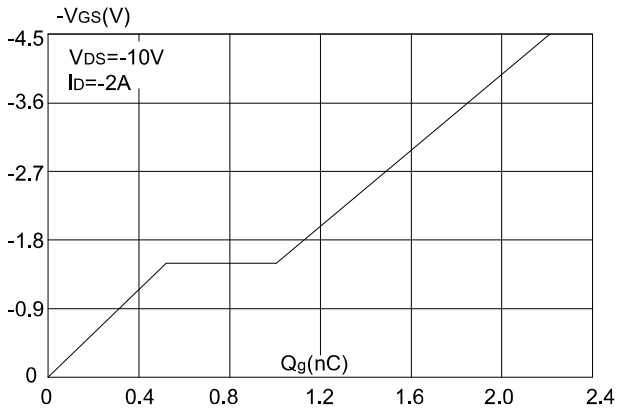
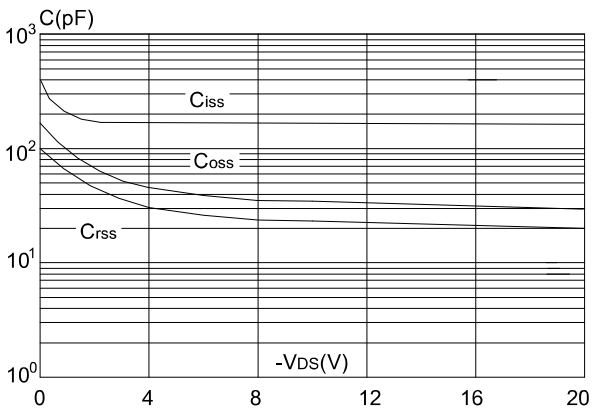


Figure 6: Capacitance Characteristics



RATING AND CHARACTERISTICS CURVES (RMD2P20S6)

Figure 7: Normalized Breakdown Voltage vs. Junction Temperature

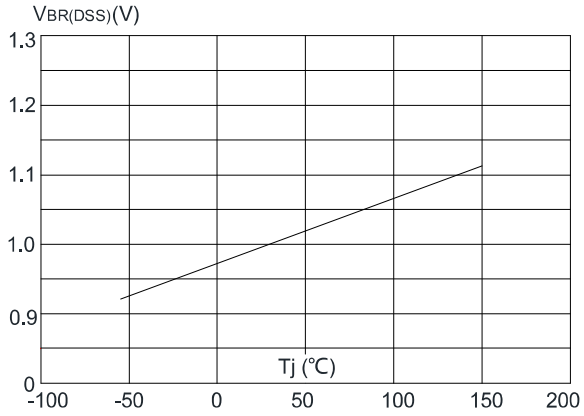


Figure 8: Normalized on Resistance vs. Junction Temperature

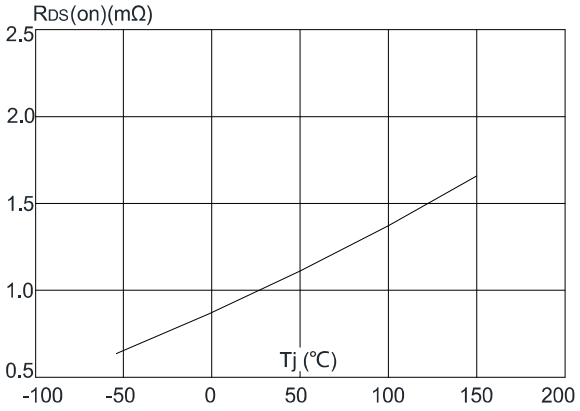


Figure 9: Maximum Safe Operating Area

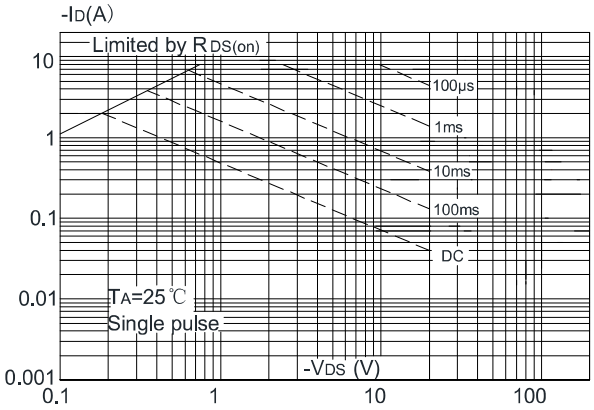


Figure 10: Maximum Continuous Drain Current vs. Ambient Temperature

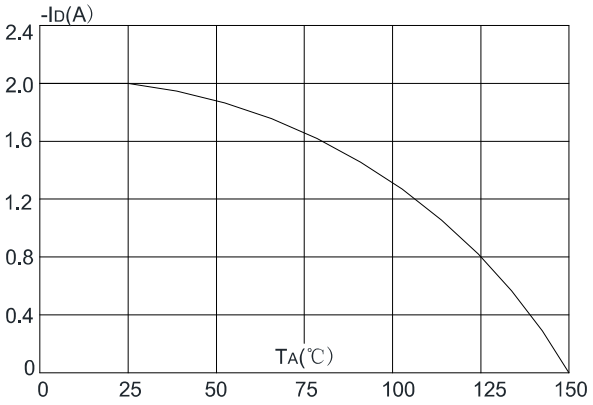
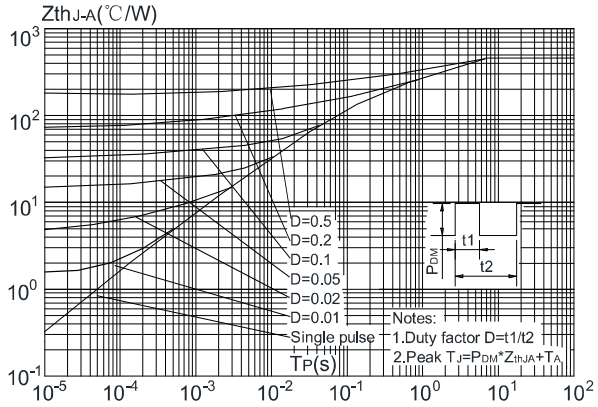
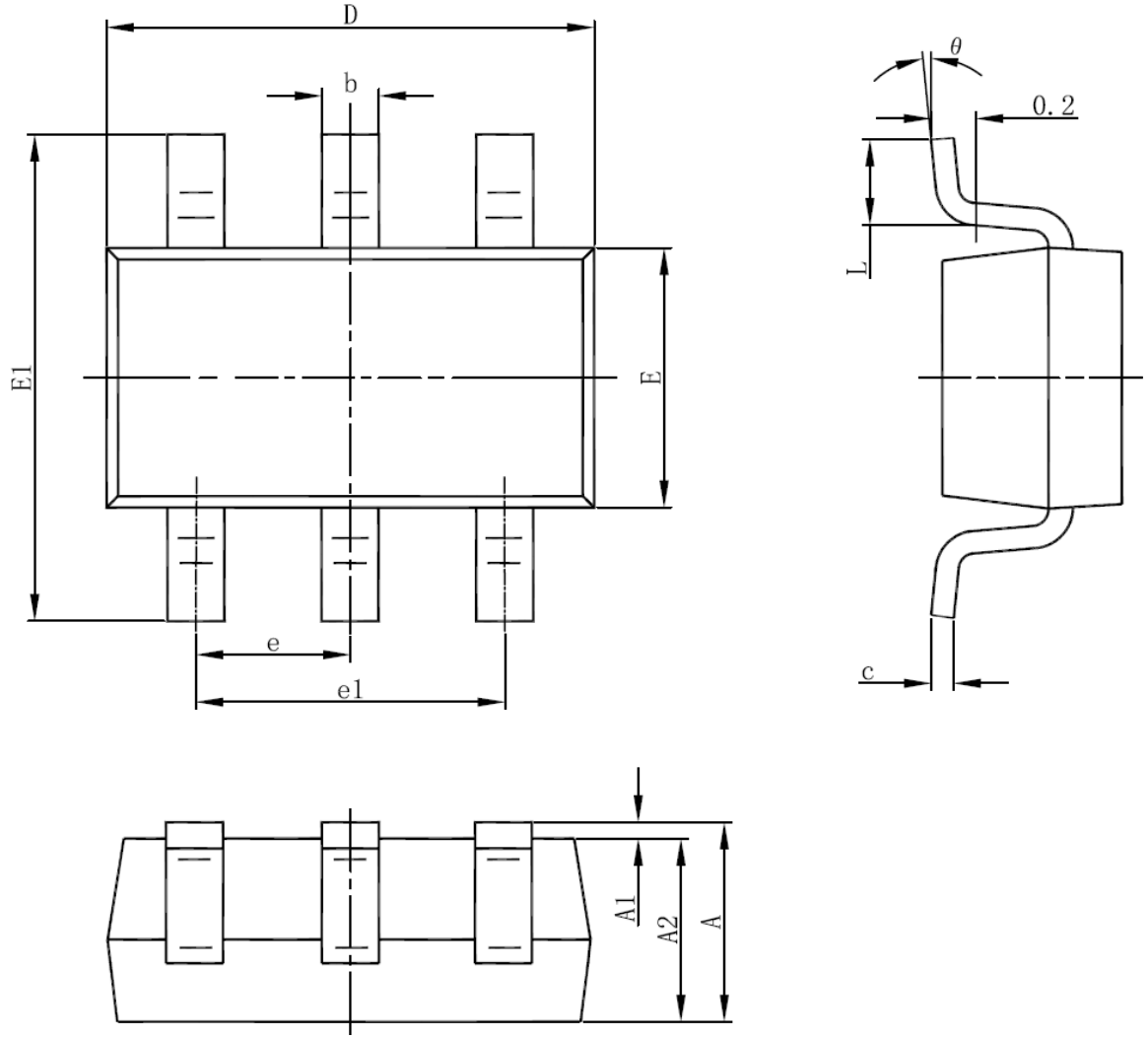


Figure.11: Maximum Effective Transient Thermal Impedance, Junction-to-Ambient



SOT23-6L Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E	1.500	1.700	0.059	0.067
E1	2.650	2.950	0.104	0.116
e	0.950(BSC)		0.037(BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°

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