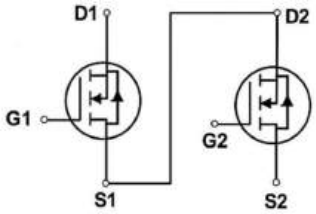
RECTRON SEMICONDUCTOR
TECHNICAL SPECIFICATION

RMD80N30DF

Dual N-Channel Enhancement Mosfet

Features

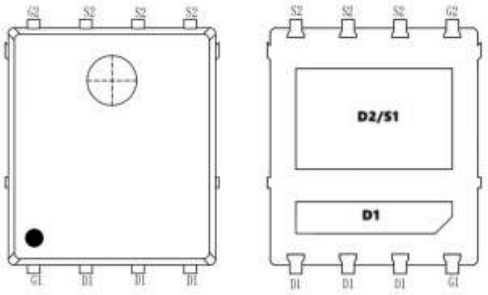
- 30V,80A
  $R_{DS(ON)}$ (TYP:4.6mΩ)<5.8mΩ @V_{GS}=10V
  $R_{DS(ON)}$ (TYP:5.8mΩ)<6.8mΩ @V_{GS}=4.5V
- Advanced Trench Technology
- High density cell design for ultra low $R_{DS(ON)}$
- Fully characterized avalanche voltage and current



Schematic Diagram

Applications

- PWM applications
- Load Switch
- Power management
- Halogen-free



Pin Assignment

Package Marking and Ordering Information

Device Marking	Device	Package	Packaging Code	Reel Size	Quantity(Pcs)	Carton(Pcs)
D80N30	RMD80N30DF	DFN5X6	-W	13inch	5000	80000

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

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current (Tc=25℃) (1)	I_D	80	A
Continuous Drain Current (Tc=100℃)	I_D	50	A
Pulsed Drain Current (1)	I_{DM}	320	A
Drain Power Dissipation	P_D	69	W
Single Pulsed Avalanche Energy (2)	E_{AS}	132	mJ
Thermal Resistance from Junction to Ambient(3)	$R_{\theta JA}$	57	℃/W
Thermal Resistance from Junction to Case	$R_{\theta JC}$	1.8	℃/W
Junction Temperature	T_J	-55~ +150	℃
Storage Temperature	T_{STG}	-55~ +150	℃

2026-08/59
REV:O

Notes:

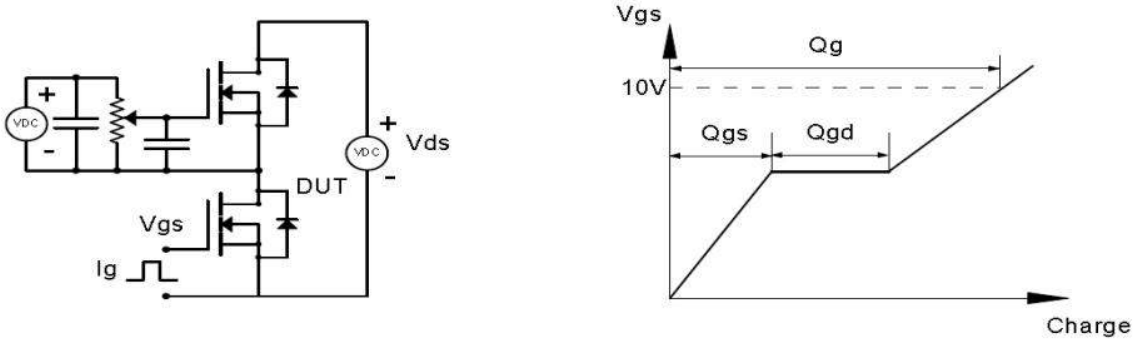
1) Repetitive Rating: pulse width limited by maximum junction temperature
2) EAS condition : T_J=25℃, V_{DD}=15V, V_G=10V, L=0.5mH, R_g=25Ω, I_{AS}=23A
3) The value of RθJA Mounted on FR4 Board（25.4mm*25.4mm*t1.6mm）With 2oz Copper T_A=25℃

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

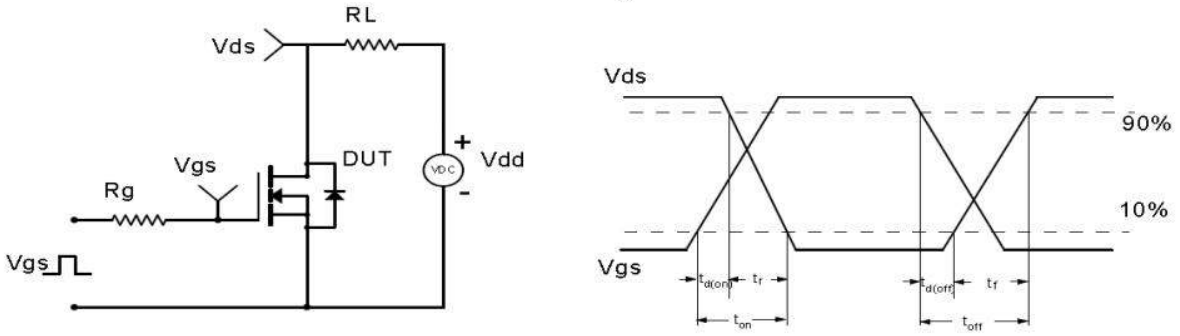
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Static Characteristics						
Drain-source breakdown voltage	$V_{(BR)DSS}$	V_{GS}=0V, I_D=250μA	30	-	-	V
Zero gate voltage drain current	I_{DSS}	V_{DS}=30V, V_{GS}=0V	-	-	1	μA
Gate-body leakage current	I_{GSS}	V_{GS}=±20V, V_{DS}=0V	-	-	±100	nA
Gate threshold voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=250μA	1.0	1.5	2.5	V
Drain-source on-resistance	$R_{DS(on)}$	V_{GS}=10V, I_D=20A	-	4.6	5.8	mΩ
		V_{GS}=4.5V, I_D=15A	-	5.8	6.8	mΩ
Gate Resistance	R_g	V_{GS}=0V, V_{DS}=0V, f=1.0MHz	-	1.7	-	Ω
Dynamic characteristics						
Input Capacitance	C_{iss}	V_{DS}=15V,V_{GS}=0V, f=1MHz	-	1970	-	pF
Output Capacitance	C_{oss}		-	195	-	
Reverse Transfer Capacitance	C_{rss}		-	175	-	
Switching characteristics						
Turn-on delay time	$t_{d(on)}$	V_{GS}=10V,V_{DS}=15V RG=3Ω, I_D=20A	-	6.7	-	ns
Turn-on rise time	t_r		-	13.4	-	
Turn-off delay time	$t_{d(off)}$		-	33.6	-	
Turn-off fall time	t_f		-	8.7	-	
Total Gate Charge	Qg	V_{DS}=15V, I_D=20A, V_{GS}=10V	-	39.5	-	nC
Gate-Source Charge	Qgs		-	5.9	-	
Gate-Drain Charge	Qgd		-	7.3	-	
Source-Drain Diode characteristics						
Diode Forward voltage	V_{SD}	T_J=25℃, V_{GS} =0V, I_D=20A	-	-	1.2	V
Diode Forward current	I_S	T_J=25℃	-	-	80	A
Body Diode Reverse Recovery Time	Trr	T_J=25℃,di/dt=100A/us, I_D=20A	-	17.8	-	ns
Body Diode Reverse Recovery Charge	Qrr		-	36.4	-	nC

Test Circuit & Waveform

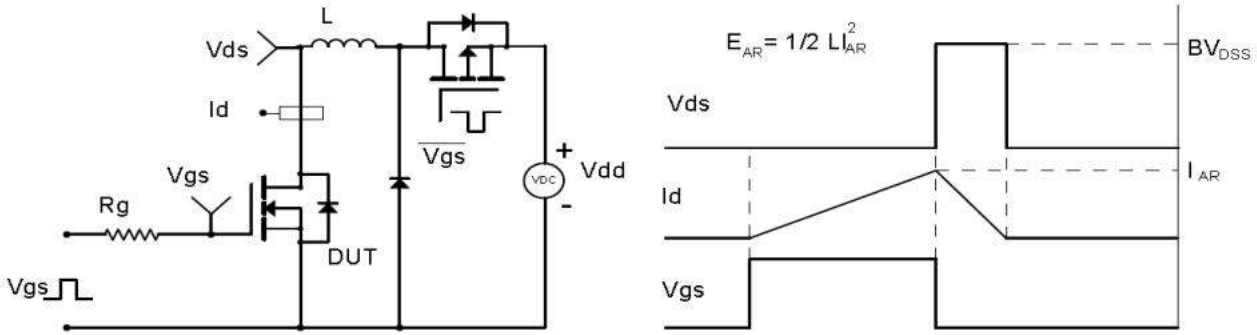
Gate Charge Test Circuit & Waveform



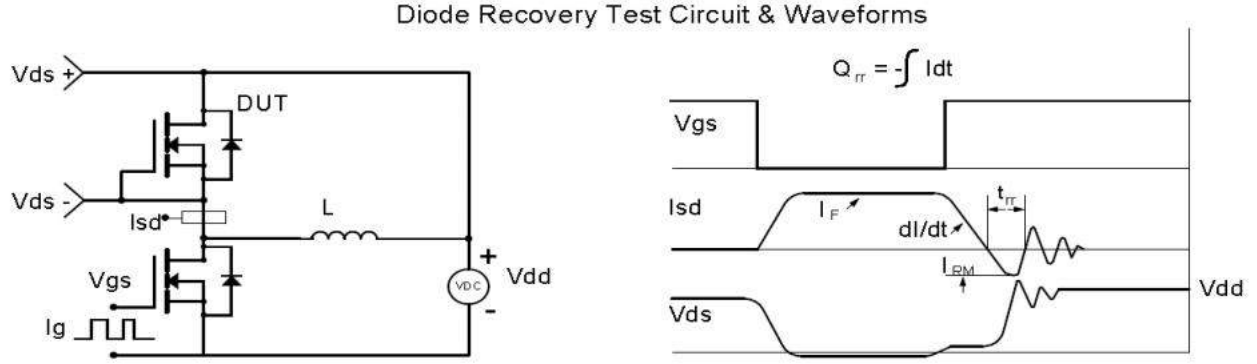
Resistive Switching Test Circuit & Waveforms



Unclamped Inductive Switching (UIS) Test Circuit & Waveforms



Diode Recovery Test Circuit & Waveforms



RATING AND CHARACTERISTICS CURVES (RMD80N30DF)

Figure 1. Output Characteristics

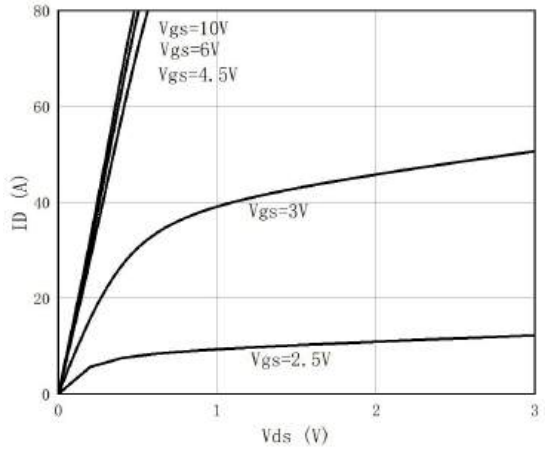


Figure 2. Transfer Characteristics

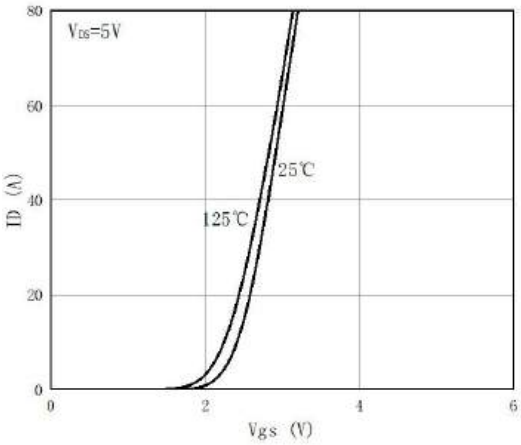


Figure 3. Source Drain Forward Characteristics

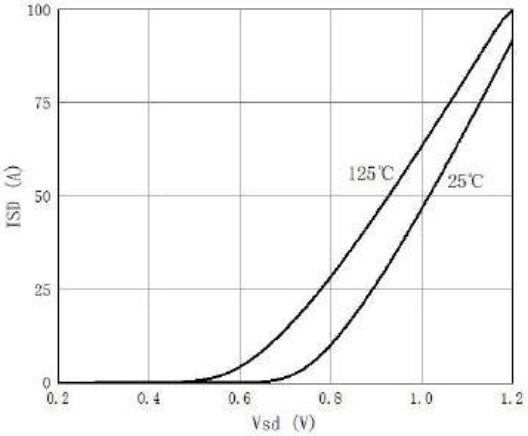


Figure 4. Gate-Charge Characteristics

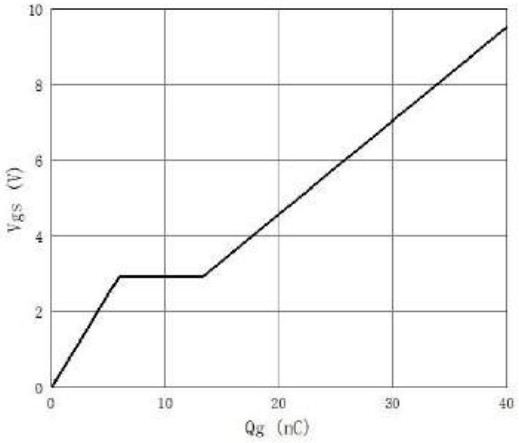


Figure 5. On-Resistance vs. Drain Current and Gate Voltage

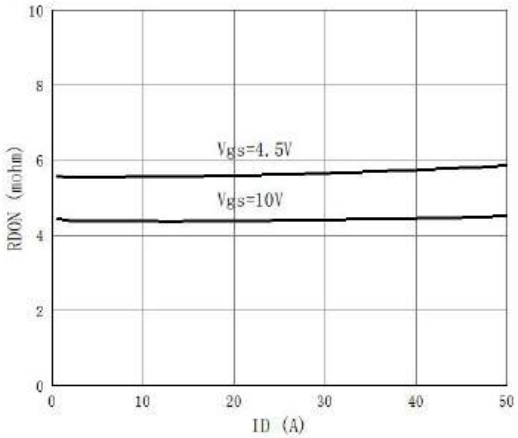
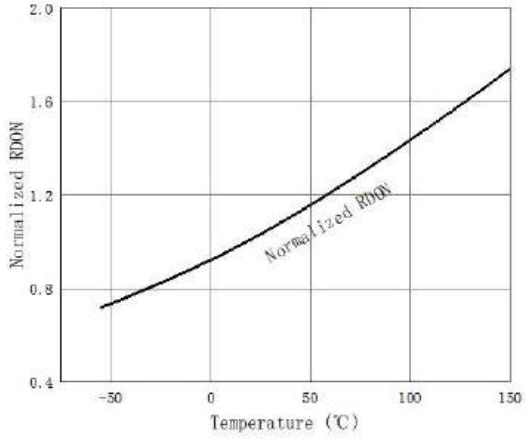


Figure 6. $R_{DS(ON)}$ vs Junction Temperature



RATING AND CHARACTERISTICS CURVES (RMD80N30DF)

Figure 7: V_{th} vs Junction Temperature

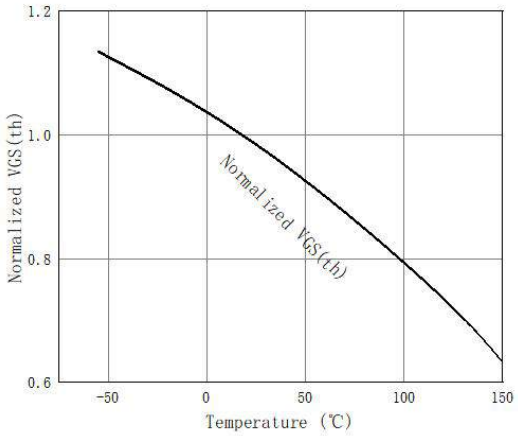


Figure 8.BVDSS vs. Junction Temperature

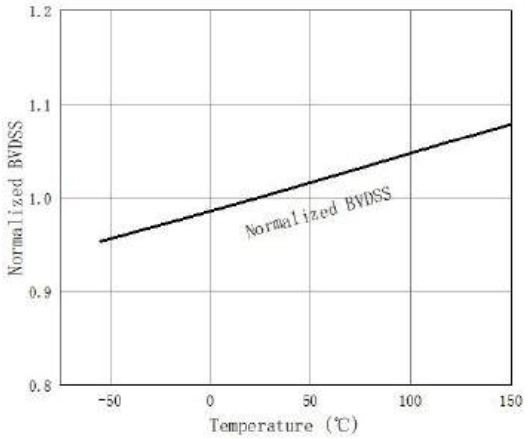


Figure 9. Capacitance

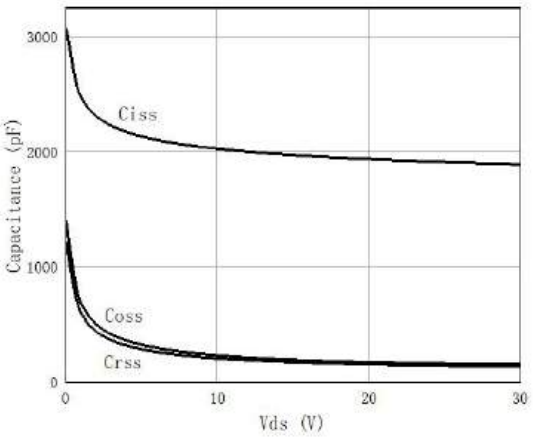


Figure 10. On-Resistance vs. Gate-Source Voltage

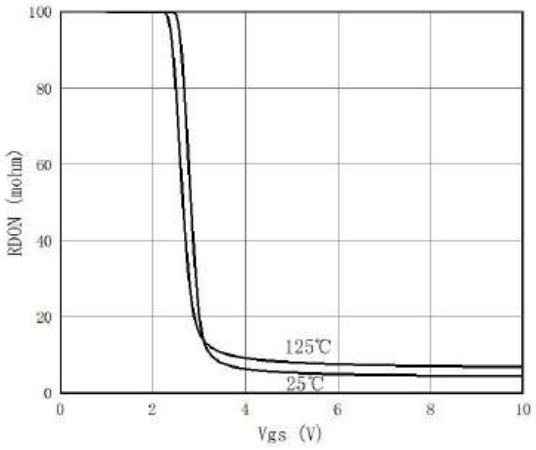


Figure 11. Current De-rating

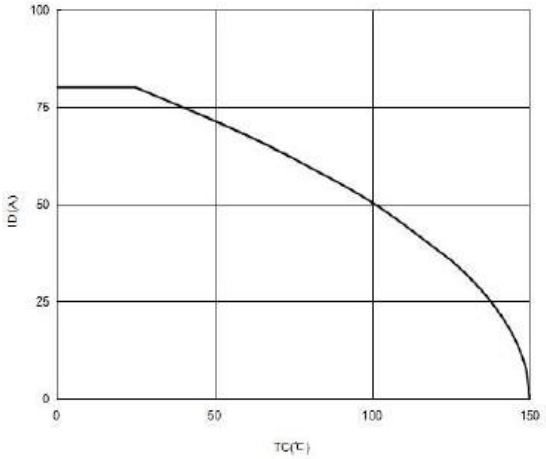
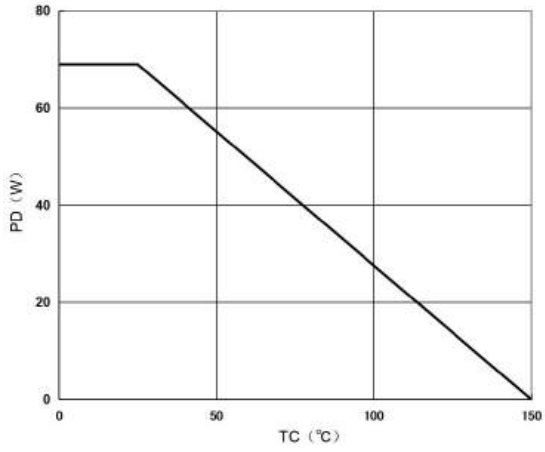


Figure 12. Power De-rating



RATING AND CHARACTERISTICS CURVES (RMD80N30DF)

Figure 13. Safe Operating Area

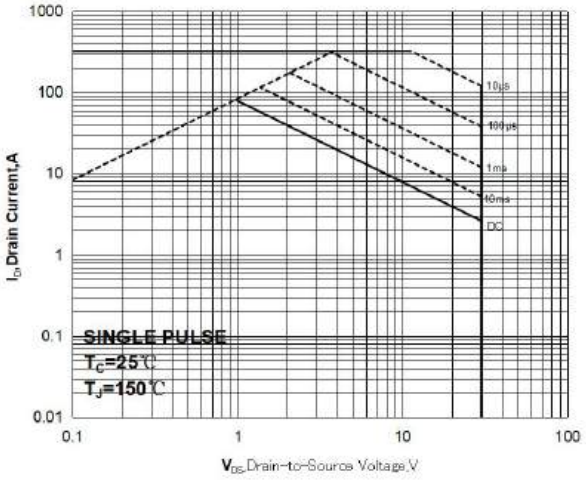
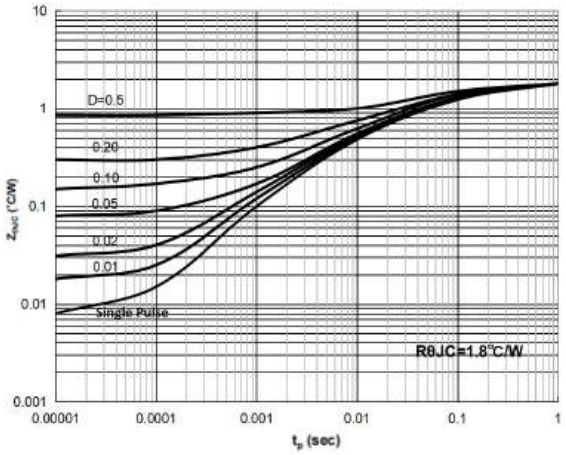


Figure 14. Normalized Maximum Transient Thermal Impedance



RECTRON

Marking on the body

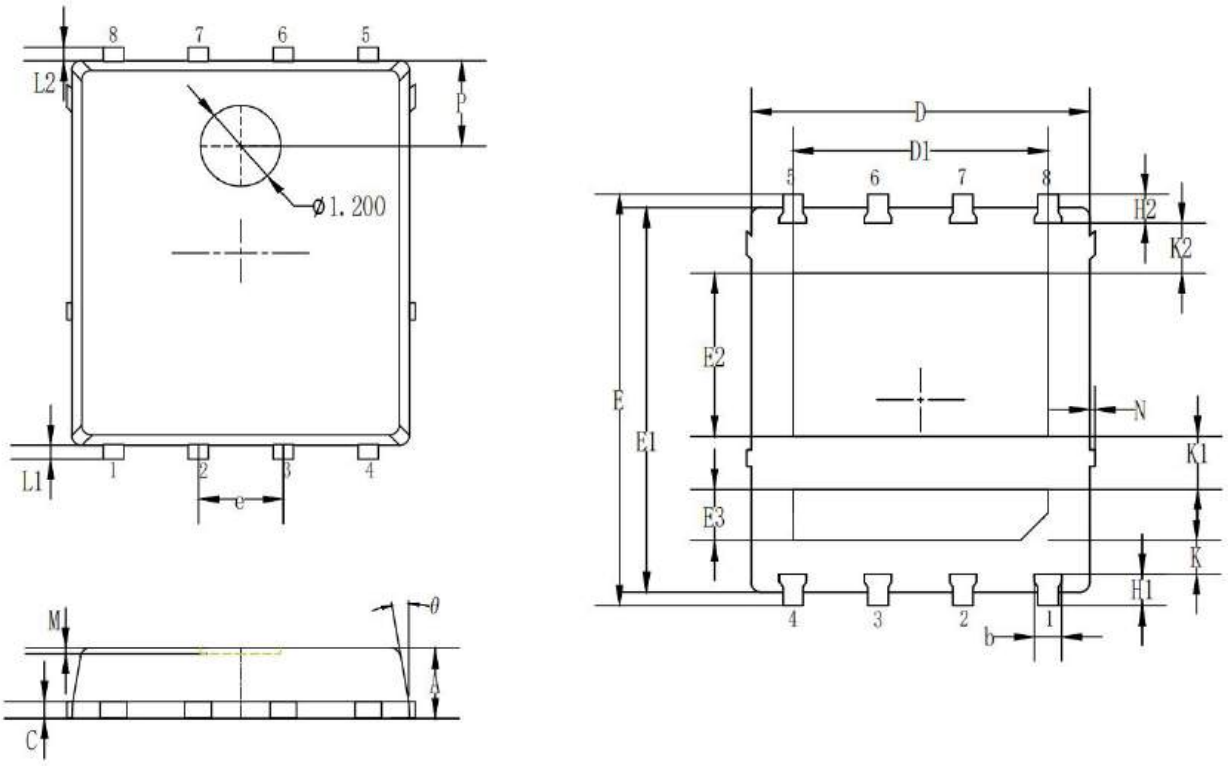
Rectron Logo →  Y Y W W

Year – Code
(Y:26-----2026
27-----2027.....)

Week – code
(WW:01~52)

D 8 0 N 3 0 ← Part No.

DFN5X6-D3 Package Information



Symbols	Millimeters		
	MIN.	NOM.	MAX.
A	0.90	1.05	1.20
b	0.35	0.40	0.50
C	0.20	0.25	0.35
D	4.90	5.05	5.20
D1	3.71	3.81	3.91
E	6.00	6.15	6.30
E1	5.65	5.75	5.85
E2	2.34	2.44	2.54
E3	0.67	0.77	0.87
e	1.27 BSC.		
H1	0.37	0.47	0.57
H2	0.33	0.43	0.53
K	0.40	0.50	0.60
K1	0.69	0.79	0.89
K2	0.65	0.75	0.85
L1/L2	0.20 REF.		
θ	8°	10°	12°
M	0.08 REF.		
N	0	-	0.15
P	1.28 REF.		

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