



YJT1D4G04AJ

N-Channel Enhancement Mode Field Effect Transistor

Product Summary

V_{DS}	40V
I_D	210A
$R_{DS(ON)}$ (at $V_{GS}=10V$)	1.4m
$R_{DS(ON)}$ (at $V_{GS}=4.5V$)	1.9m
100% EAS Tested	
100% V_{DS} Tested	

General Description

Split gate trench MOSFET technology
 Excellent package for heat dissipation
 High density cell design for low $R_{DS(ON)}$
 Moisture Sensitivity Level 1
 Epoxy Meets UL 94 V-0 Flammability Rating
 Halogen Free

Applications

Power switching application
 Uninterruptible power supply
 DC-DC convertor

Absolute Maximum Ratings ($T_J=25$ unless otherwise noted)

Parameter			Symbol	Limit	Unit
Drain-source Voltage			V_{DS}	40	V
Gate-source Voltage			V_{GS}	± 20	V
Continuous Drain Current (Note 1,2)	Steady-State	$T_A=25^\circ C$	I_D	32	A
		$T_A=100^\circ C$		20	
Continuous Drain Current (Note 1,3)	Steady-State	$T_C=25^\circ C$		210	
		$T_C=100^\circ C$		132	
Pulsed Drain Current	$T_C=25$, $t_p=100\mu s$		I_{DM}	840	A
Avalanche energy	$V_G=10V$, $R_G=0.5mH$, $I_{AS}=49A$		EAS	600.25	mJ
Total Power Dissipation (Note 1,2)	Steady-State	$T_A=25^\circ C$	P_D	2.7	W
		$T_A=100^\circ C$		1.1	
Total Power Dissipation (Note 1,3)	Steady-State	$T_C=25^\circ C$ $T_C=100$			

YJT1D4G04AJ



Typical Electrical and Thermal Characteristics Diagrams

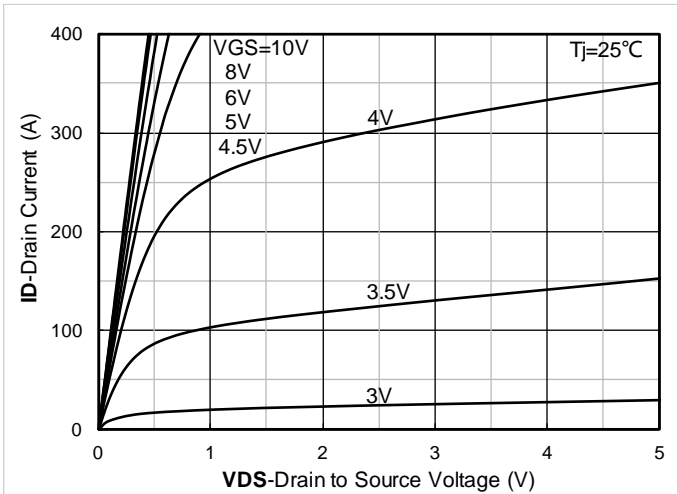


Figure 1. Output Characteristics

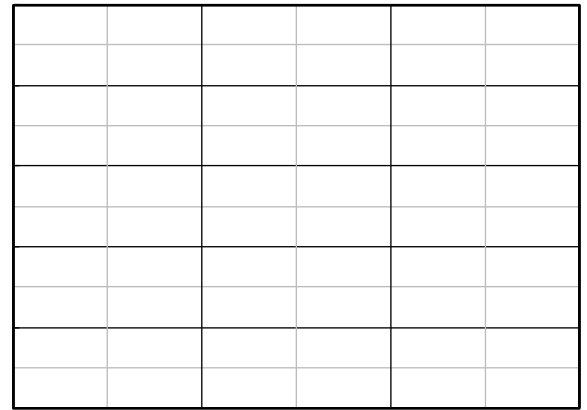


Figure 2. Transfer Characteristics

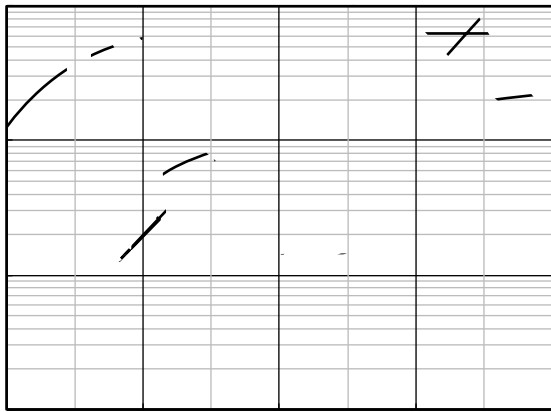


Figure 3. Capacitance Characteristics

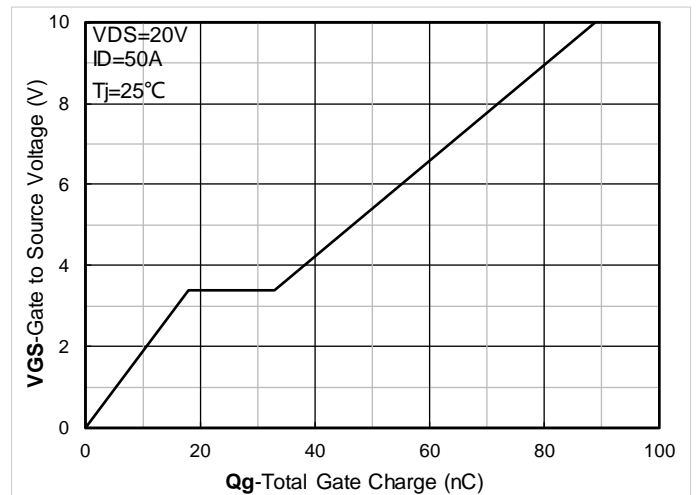


Figure 4. Gate Charge

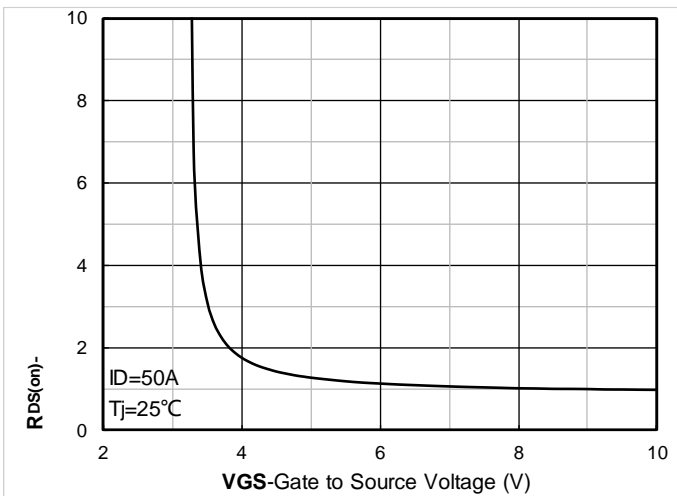


Figure 5. On-Resistance vs Gate to Source Voltage

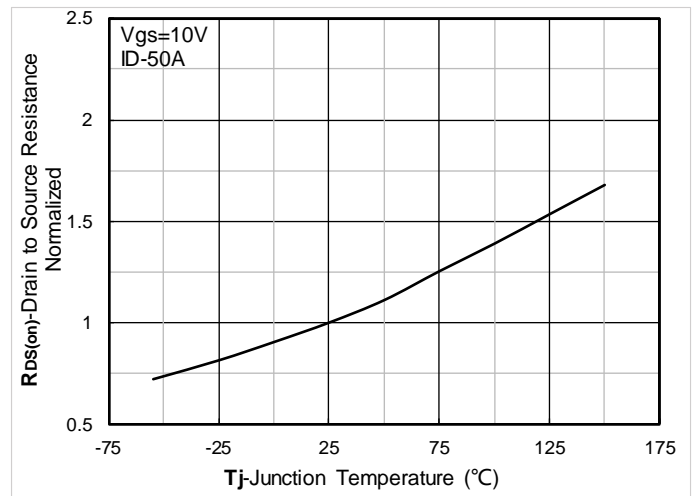


Figure 6. Normalized On-Resistance



YJT1D4G04AJ

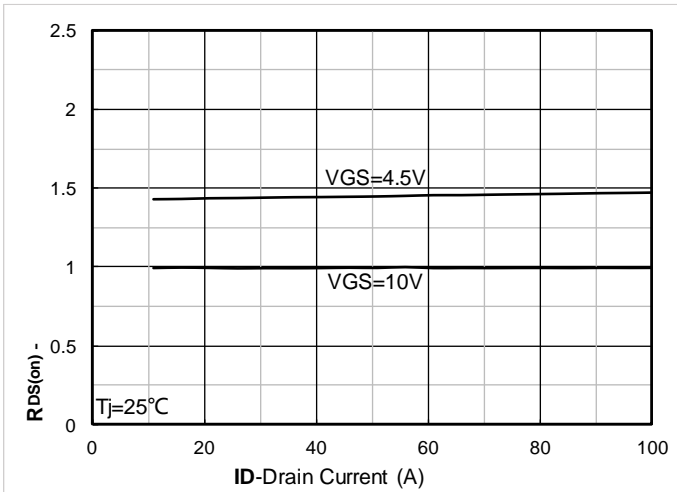


Figure 7. RDS(on) VS Drain Current

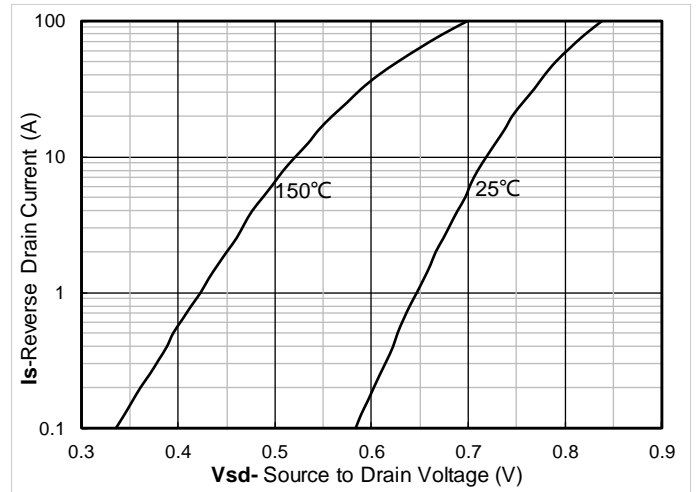


Figure 8. Forward characteristics of reverse diode

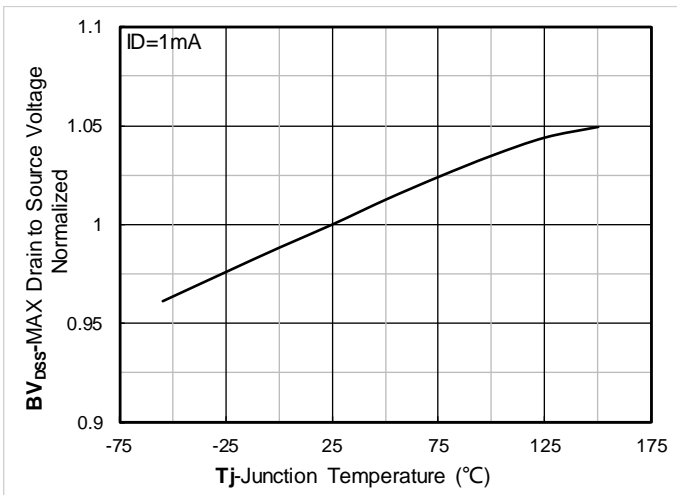


Figure 9. Normalized breakdown voltage

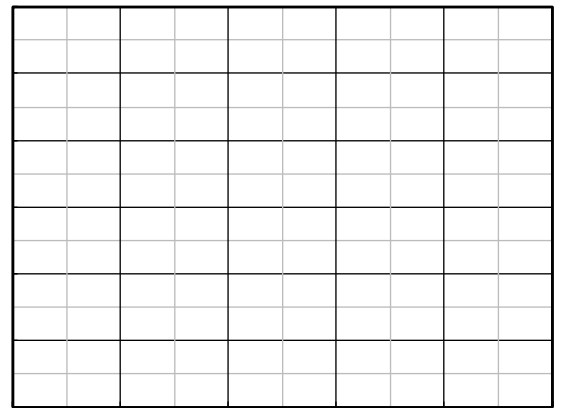


Figure 10. Normalized Threshold voltage

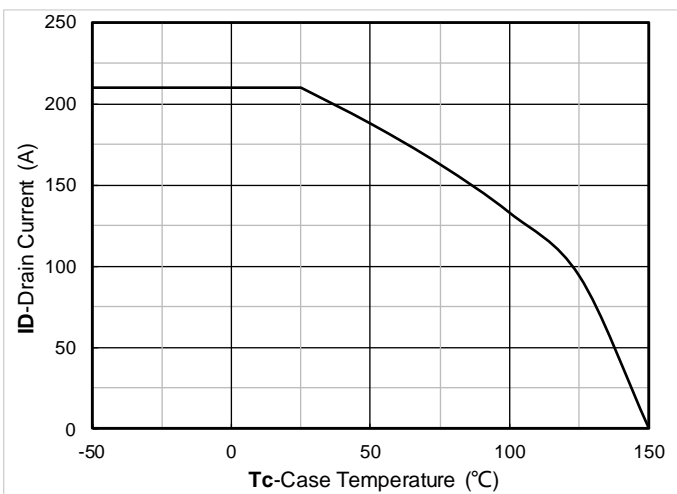


Figure 11. Current dissipation

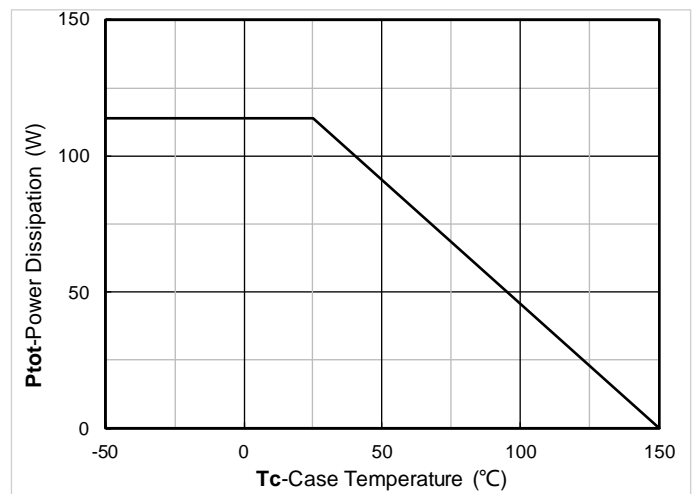


Figure 12. Power dissipation

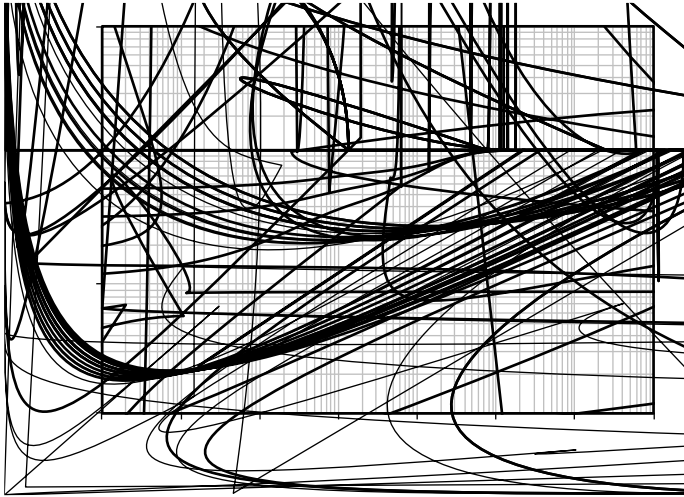


Figure 13. Maximum Transient Thermal Impedance

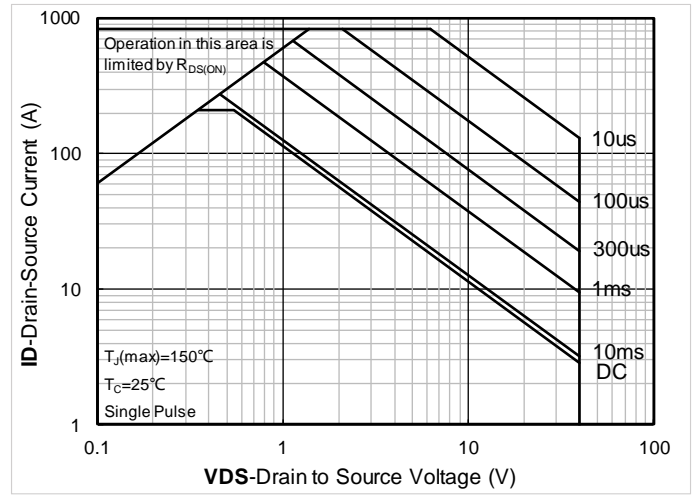


Figure 14. Safe Operation Area

Test Circuits & Waveforms

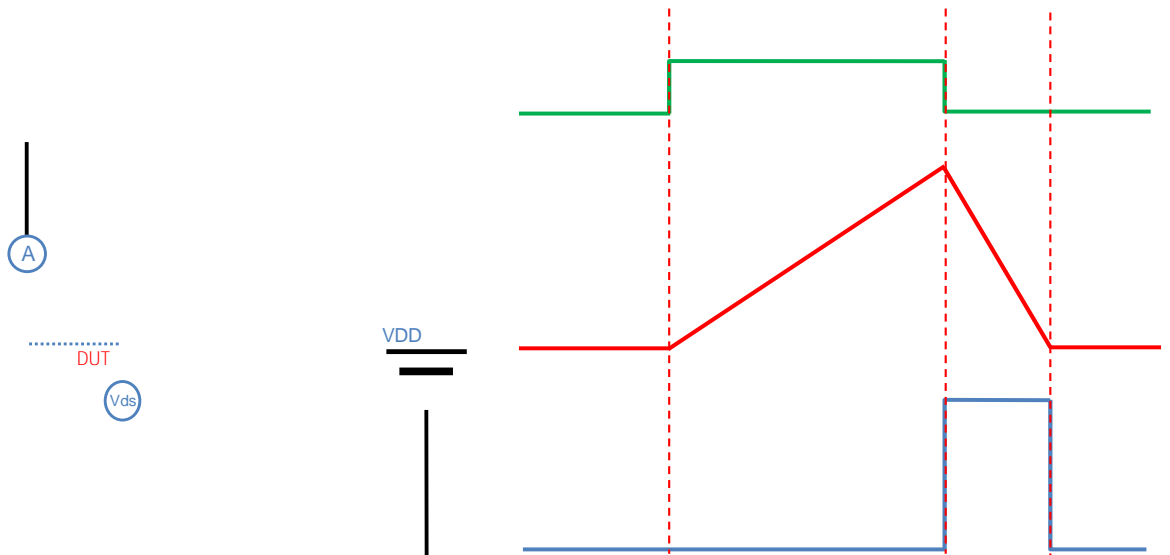


Figure A. Unclamped Inductive Switching (UIS) Test Circuit & Waveform

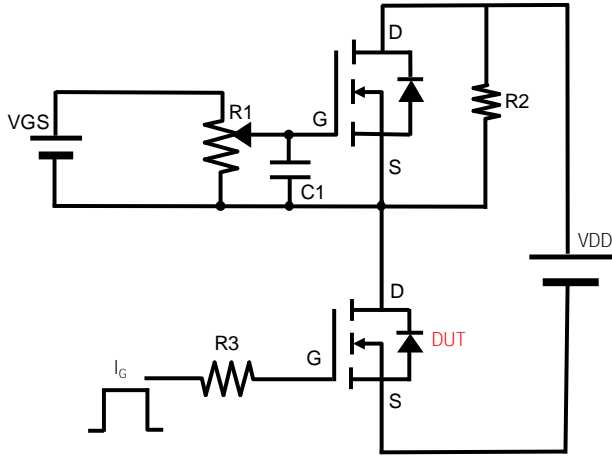


Figure B. Gate Charge Test Circuit & Waveform

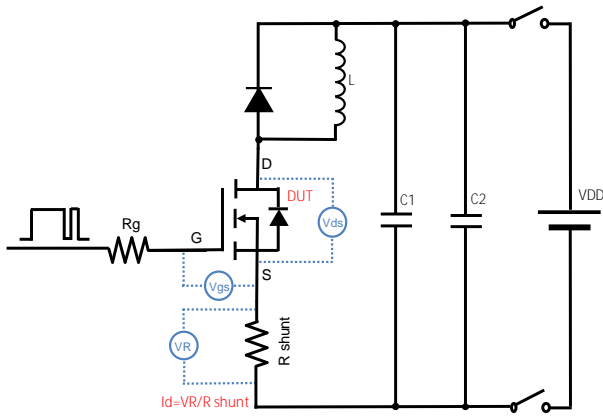


Figure C. Resistive Switching Test Circuit & Waveform

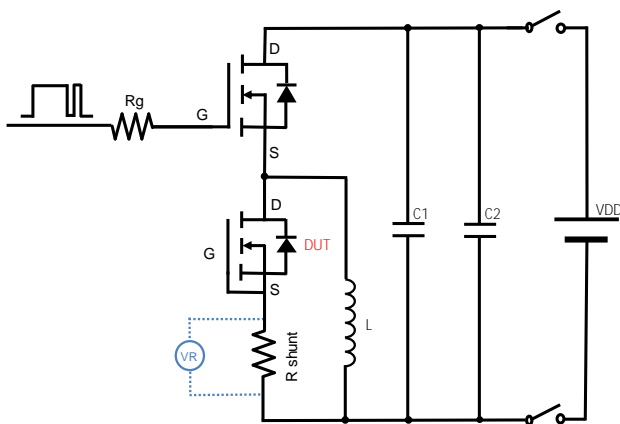
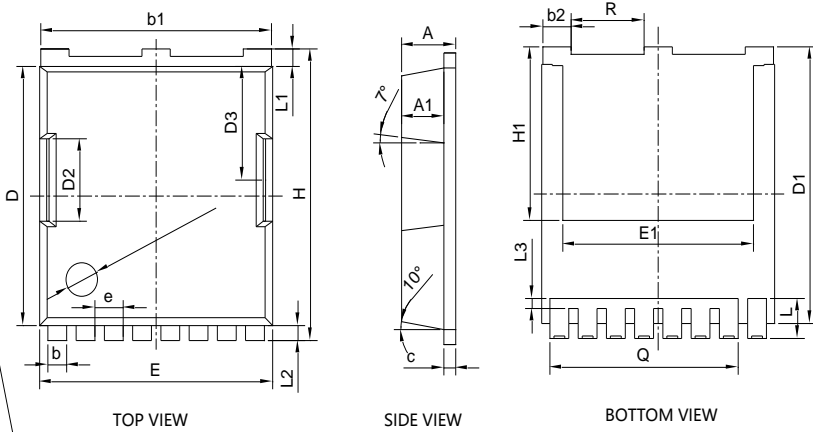


Figure D. Diode Recovery Test Circuit & Waveform



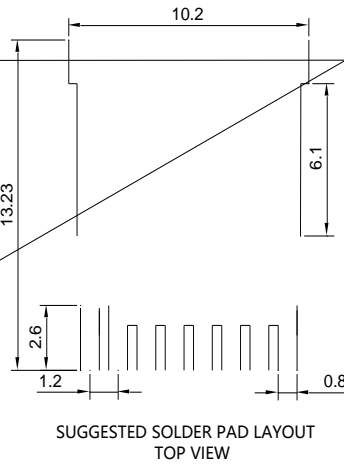
YJT1D4G04AJ

TOLL Package information



SYMBOL	MILLIMETER		
	MIN	NOM	MAX
A	2.2	2.3	2.4
A1	1.7	1.8	1.9
b	0.7	0.8	0.9
b1	9.7	9.8	9.9
b2	1.1	1.2	1.3
c	0.4	0.5	0.6
D	10.28	10.38	10.48
D1	10.98	11.08	11.18
D2	3.2	3.3	3.4
D3	4.45	4.55	4.65
E	9.8	9.9	10
E1	8	8.1	8.2
e	1.2 BSC		
H	11.58	11.68	11.78
H1	6.95 BSC		
i	0.1 REF		
j	0.46 REF		
L	1.5	1.6	1.7
L1	0.6	0.7	0.8
L2	0.5	0.6	0.7
L3	0.3	0.4	0.5
Q	8 REF		
R	3.0	3.1	3.2

- Note:
1. Controlling dimension: in millimeters.
 2. General tolerance: ± 0.03 mm.
 3. The pad layout is for reference purposes only.



UNIT mm



YJT1D4G04AJ

Disclaimer

The information presented in this document is for reference only. Yangzhou Yangjie Electronic Technology Co., Ltd. reserves the right to make changes without notice for the specification of the products displayed herein to improve reliability, function or design or otherwise.

The product listed herein is designed to be used with ordinary electronic equipment or devices, and not designed to be used with equipment or devices which require high level of reliability and the malfunction of which would directly endanger human life (such as medical instruments, transportation equipment, aerospace machinery, nuclear-reactor controllers, fuel controllers and other safety devices), Yangjie or anyone on its behalf, assumes no responsibility or liability for any damages resulting from such improper use of sale.

This publication supersedes & replaces all information previously supplied. For additional information, please visit our website <http://www.21yangjie.com>