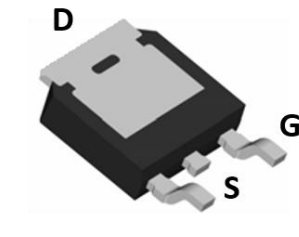
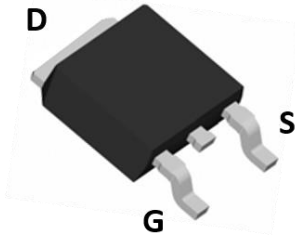
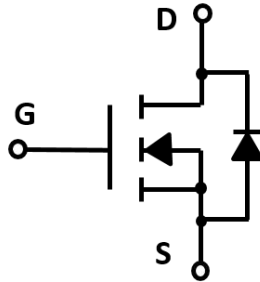


N-Channel Enhancement Mode Field Effect Transistor



TO-252



Product Summary

- V_{DS} 100V
- I_D 40A
- $R_{DS(ON)}$ (at $V_{GS}=10V$) <20 mohm
- $R_{DS(ON)}$ (at $V_{GS}=4.5V$) <26 mohm
- 100% UIS Tested
- 100% ∇V_{DS} Tested

General Description

- Low $R_{DS(on)}$ & FOM
- Extremely low switching loss
- Excellent stability and uniformity
- Fast switching and soft recovery

Applications

- Consumer electronic power supply
- Motor control
- Synchronous-rectification
- Isolated DC/DC convertor
- Invertors

■ Absolute Maximum Ratings ($T_A=25^\circ C$ unless otherwise noted)

Parameter	Symbol	Limit	Unit
Drain-source Voltage	V_{DS}	100	V
Gate-source Voltage	V_{GS}	± 20	V
Drain Current ^A	I_D	40	A
Pulsed Drain Current ^B	I_{DM}	120	A
Avalanche energy ^C	E_{AS}	30	mJ
Total Power Dissipation ^D	P_D	72	W
Thermal Resistance Junction-to-Case	$R_{\theta JC}$	1.74	$^\circ C/W$
Thermal Resistance Junction-to-Ambient ^E	$R_{\theta JA}$	62	$^\circ C/W$
Junction and Storage Temperature Range	T_J, T_{STG}	-55~+150	$^\circ C$

■ Ordering Information (Example)

PREFERRED P/N	PACKING CODE	Marking	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
YJD40G10A	F2	YJD40G10A	2500	/	25000	13" reel



YJD40G10A

■ Electrical Characteristics (T_J=25℃ unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Static Parameter						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} = 0V, I _D =250μA	100			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =100V, 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	1.8	2.5	V
Static Drain-Source On-Resistance	R _{DS(on)}	V _{GS} = 10V, I _D =8A		17	20	mΩ
		V _{GS} = 4.5V, I _D =6A		20	26	
Diode Forward Voltage	V _{SD}	I _S =40A, V _{GS} =0V			1.3	V
Maximum Body-Diode Continuous Current	I _S				40	A
Dynamic Parameters						
Input Capacitance	C _{iss}	V _{DS} =50V, V _{GS} =0V, f=1MHZ		1190		pF
Output Capacitance	C _{oss}			195		
Reverse Transfer Capacitance	C _{rss}			4.1		
Switching Parameters						
Total Gate Charge	Q _g	V _{GS} =10V, V _{DS} =50V, I _D =8A		20		nC
Gate-Source Charge	Q _{gs}			2.4		
Gate-Drain Charge	Q _{gd}			5.3		
Reverse Recovery Charge	Q _{rr}	I _F =8A, di/dt=100A/us		95		nC
Reverse Recovery Time	t _{rr}			50		
Turn-on Delay Time	t _{D(on)}	V _{GS} =10V, V _{DD} =50V, I _D =10A R _{GEN} =2.2Ω		17.5		ns
Turn-on Rise Time	t _r			3.9		
Turn-off Delay Time	t _{D(off)}			33.5		
Turn-off fall Time	t _f			3.2		

- A. Calculated continuous current based on maximum allowable junction temperature.
 B. Repetitive rating; pulse width limited by max. junction temperature.
 C. V_{DD}=50 V, R_G=25 Ω, L=0.3 mH, starting T_J=25 °C.
 D. P_D is based on max. junction temperature, using junction-case thermal resistance.
 E. The value of R_{JA} is measured with the device mounted on 1 in 2 FR-4 board with 2oz. Copper, in a still air environment with T_A=25 °C.



■ Typical Performance Characteristics

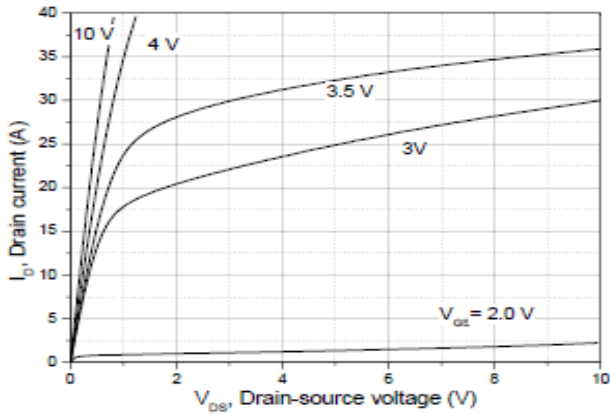


Figure1. Output Characteristics

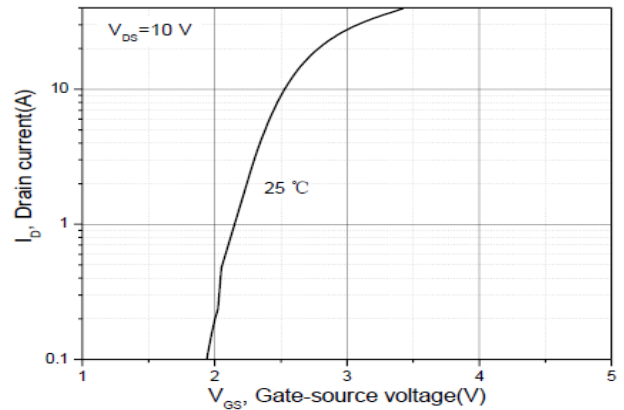


Figure2. Transfer Characteristics

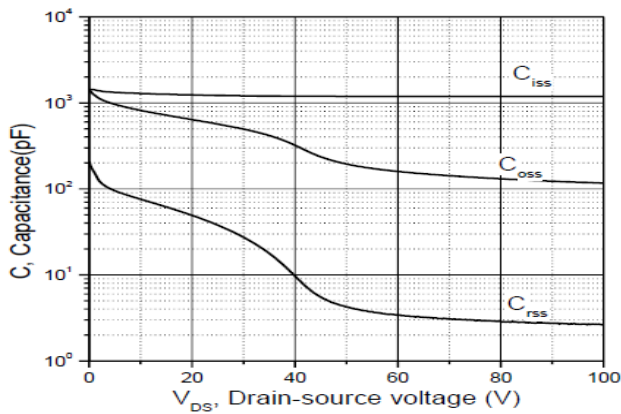


Figure3. Capacitance Characteristics

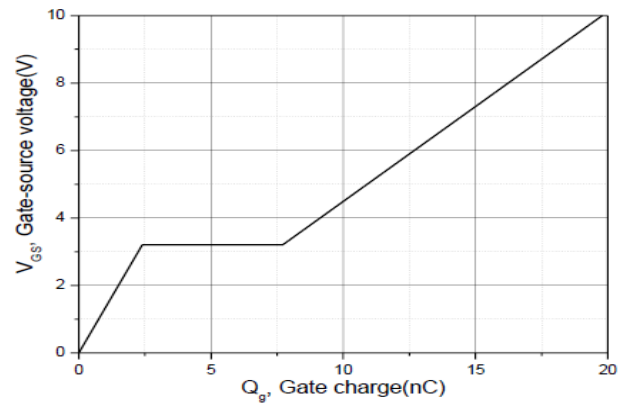


Figure4. Gate Charge

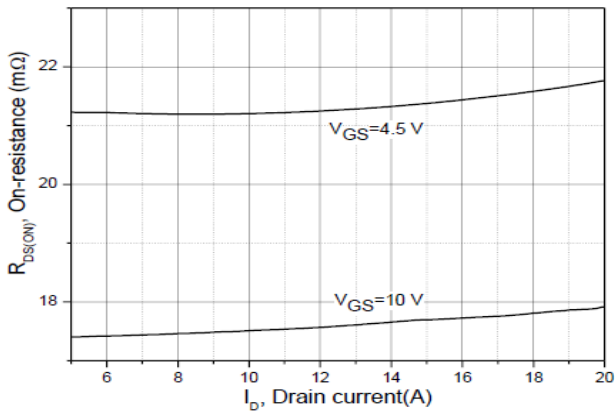


Figure5. Drain-Source on Resistance

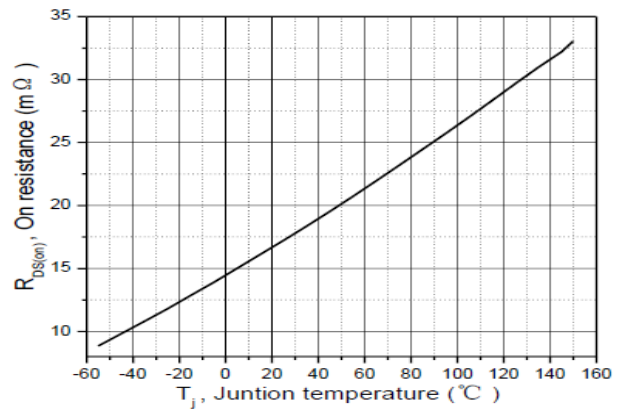


Figure6. Drain-Source on Resistance



YJD40G10A

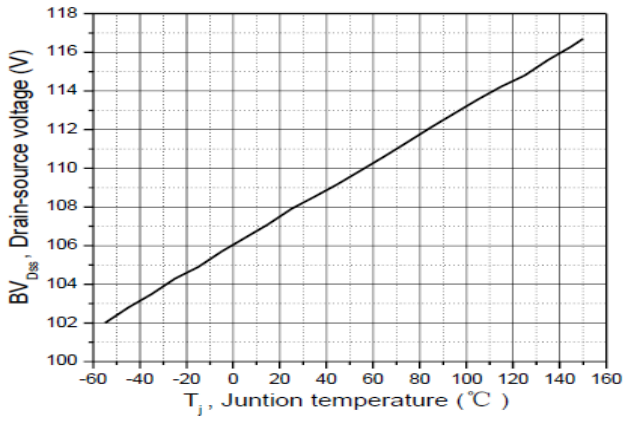


Figure7. Drain-source breakdown voltage

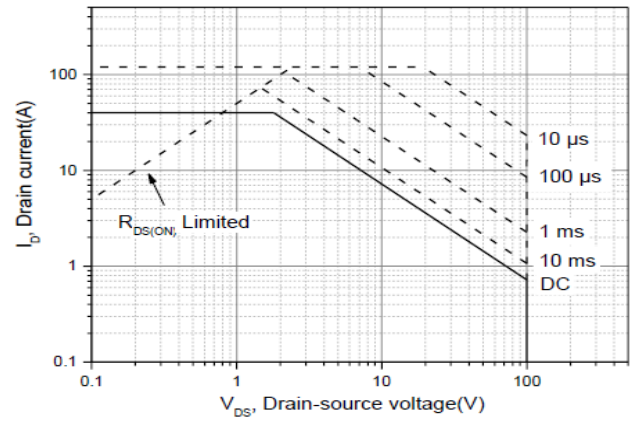
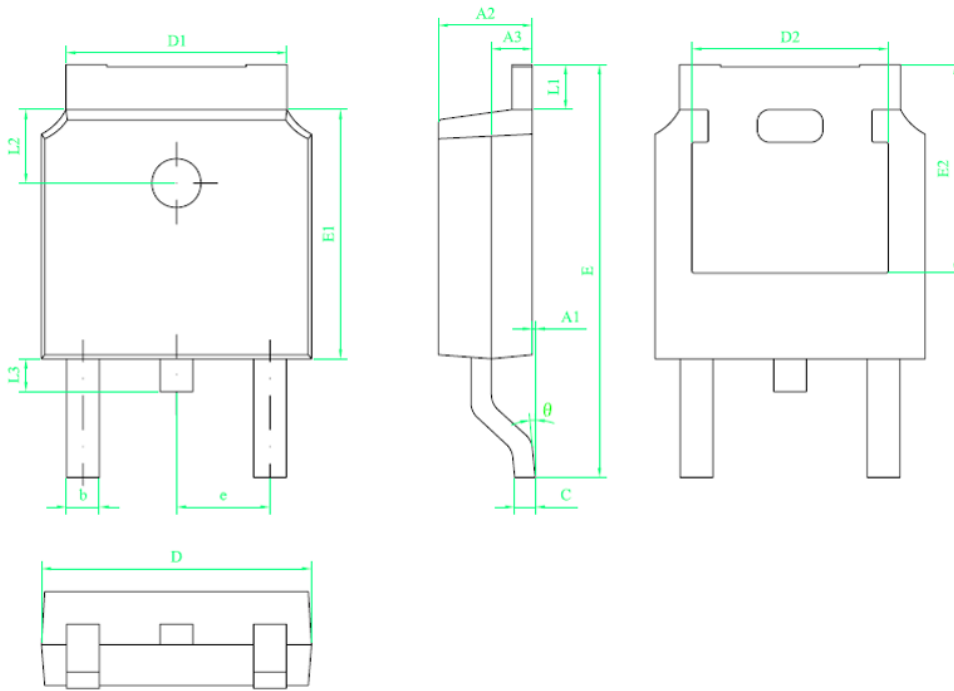


Figure8.Safe Operation Area



YJD40G10A

■ TO-252 Package information



符号	尺寸		
	min	nom	max
A1	0	---	0.10
A2	2.20	2.30	2.40
A3	0.90	1.00	1.10
b	0.75	---	0.85
c	0.50	---	0.60
D	6.50	6.60	6.70
D1	5.30	5.40	5.50
D2	4.70	4.80	4.90
E	9.90	10.10	10.30
E1	6.00	6.10	6.20
E2	5.20	5.30	5.40
e	2.20	2.286	2.40
L1	0.90	---	1.25
L2	1.70	1.80	1.90
L3	0.60	0.80	1.00
θ	0°	---	8°

技术要求:

1. 树脂体不应有崩裂、缺损等缺陷;
2. 树脂上下部X、Y方向偏差不得超过0.20;
3. 胶体两端留胶总和宽度不超过0.50;
4. 所有单位为mm;



YJD40G10A

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