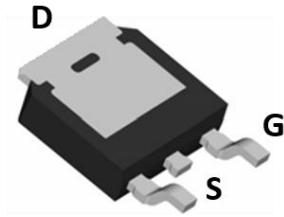
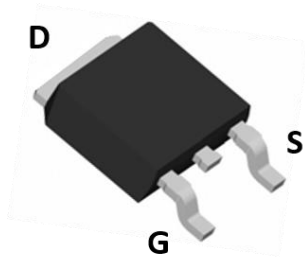
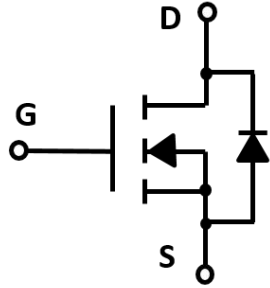


N-Channel Enhancement Mode Field Effect Transistor



TO-252



Product Summary

- V_{DS} 30V
- I_D 80A
- $R_{DS(ON)}$ (at $V_{GS}=10V$) $<4.5m\Omega$
- $R_{DS(ON)}$ (at $V_{GS}=4.5V$) $<6.0m\Omega$
- 100% UIS Tested
- 100% ∇V_{DS} Tested

General Description

- Trench Power LV MOSFET technology
- Excellent package for heat dissipation
- High density cell design for low $R_{DS(ON)}$

Applications

- High current load applications
- Load switching
- Hard switched and high frequency circuits
- Uninterruptible power supply

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

Parameter		Symbol	Limit	Unit
Drain-source Voltage		V_{DS}	30	V
Gate-source Voltage		V_{GS}	± 20	V
Drain Current	$T_C=25^\circ\text{C}$	I_D	80	A
	$T_C=100^\circ\text{C}$		56	
Pulsed Drain Current ^A		I_{DM}	190	A
Total Power Dissipation	$T_C=25^\circ\text{C}$	P_D	54	W
	$T_C=100^\circ\text{C}$		27	W
Single Pulse Avalanche Energy ^B		E_{AS}	225	mJ
Thermal Resistance Junction-to-Case ^C		$R_{\theta JC}$	2.8	$^\circ\text{C}/\text{W}$
Junction and Storage Temperature Range		T_J, T_{STG}	$-55\sim+175$	$^\circ\text{C}$

■ Ordering Information (Example)

PREFERRED P/N	PACKING CODE	Marking	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
YJD80N03A	F2	YJD80N03A	2500	2500	25000	13" reel



YJD80N03A

■ Electrical Characteristics (T_J=25°C unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Static Parameter						
Drain-Source Breakdown Voltage	BV _{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
Static Drain-Source On-Resistance	R _{DS(ON)}	V _{GS} = 10V, I _D =15A		3.6	4.5	mΩ
		V _{GS} = 4.5V, I _D =15A		4.7	6.0	
Diode Forward Voltage	V _{SD}	I _S =20A,V _{GS} =0V		0.80	1.2	V
Maximum Body-Diode Continuous Current	I _S				80	A
Dynamic Parameters						
Input Capacitance	C _{iss}	V _{DS} =15V,V _{GS} =0V,f=1MHZ		1620		pF
Output Capacitance	C _{oss}			336		
Reverse Transfer Capacitance	C _{rss}			195		
Switching Parameters						
Total Gate Charge	Q _g	V _{GS} =10V,V _{DS} =15V,I _D =20A		55.7		nC
Gate-Source Charge	Q _{gs}			13		
Gate-Drain Charge	Q _{gd}			11.3		
Reverse Recovery Charge	Q _{rr}	I _F =20A, di/dt=100A/us		35		ns
Reverse Recovery Time	t _{rr}			31		
Turn-on Delay Time	t _{D(on)}	V _{GS} =10V,V _{DD} =20V, I _D =2A,R _L =1Ω R _{GEN} =3Ω		9		
Turn-on Rise Time	t _r			21		
Turn-off Delay Time	t _{D(off)}			29		
Turn-off fall Time	t _f			7		

A. Pulse Test: Pulse Width≤300us, Duty cycle ≤2%.

B. T_J=25°C, V_{DD}=20V, V_G=10V, L=0.5mH, R_g=25Ω

C. R_{θJA} is the sum of the junction-to-case and case-to-ambient thermal resistance, where the case thermal reference is defined as the solder mounting surface of the drain pins. R_{θJC} is guaranteed by design, while R_{θJA} is determined by the board design. The maximum rating presented here is based on mounting on a 1 in 2 pad of 2oz copper.



■ Typical Performance Characteristics

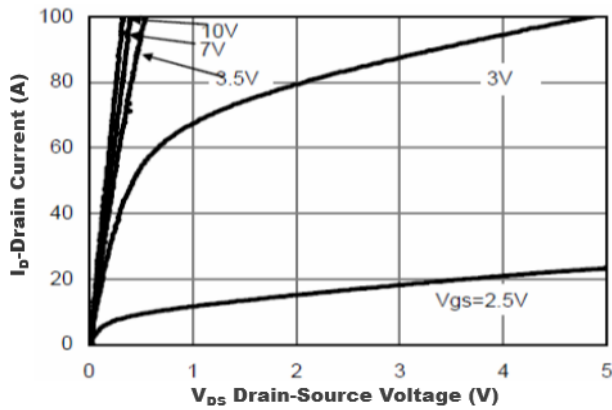


Figure1. Output Characteristics

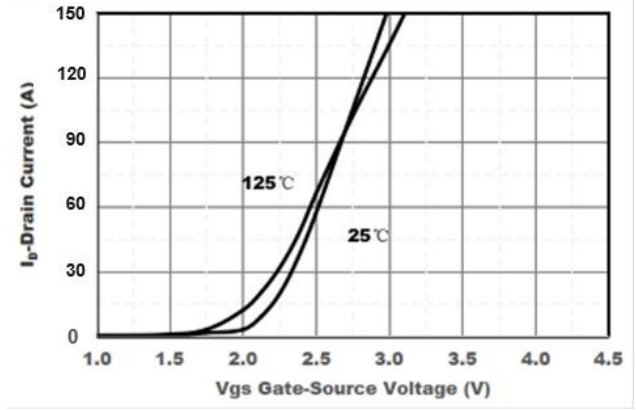


Figure2. Transfer Characteristics

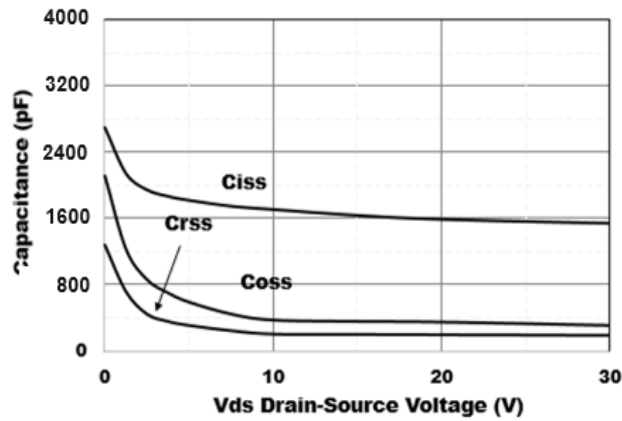


Figure3. Capacitance Characteristics

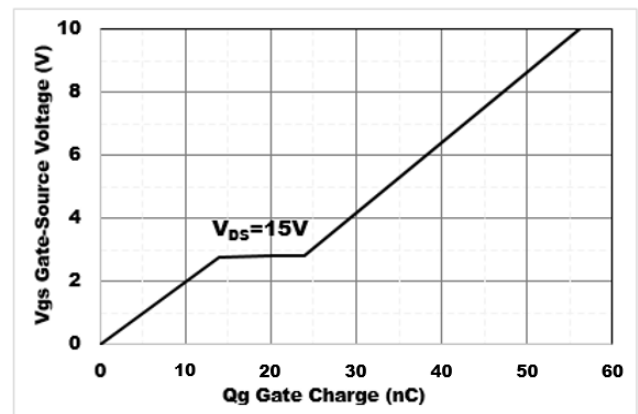


Figure4. Gate Charge

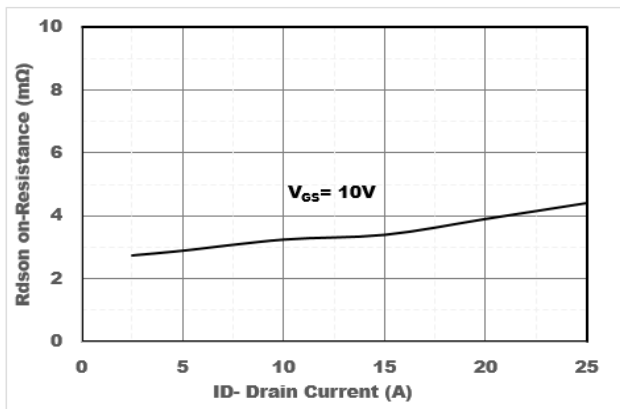


Figure5. Drain-Source on Resistance

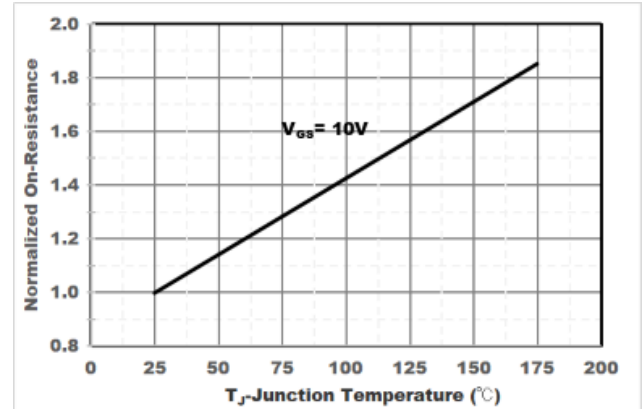


Figure6. Drain-Source on Resistance

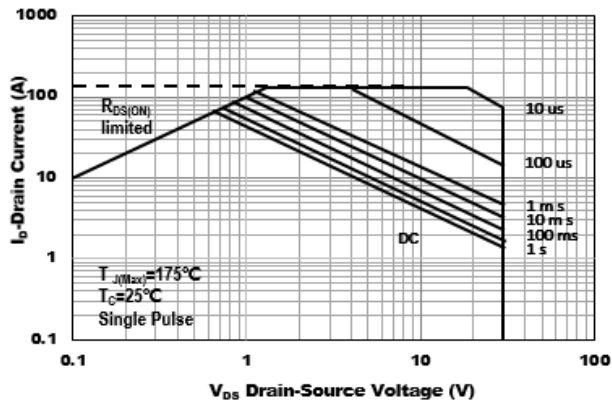


Figure7. Safe Operation Area

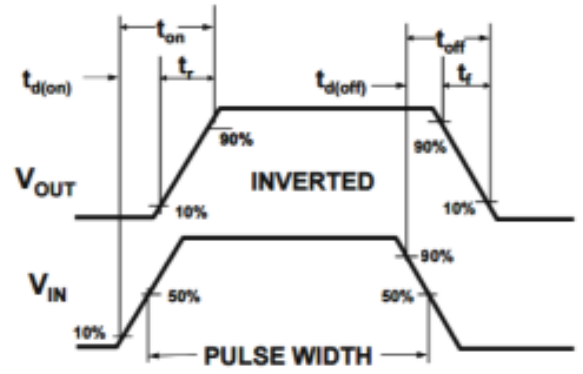
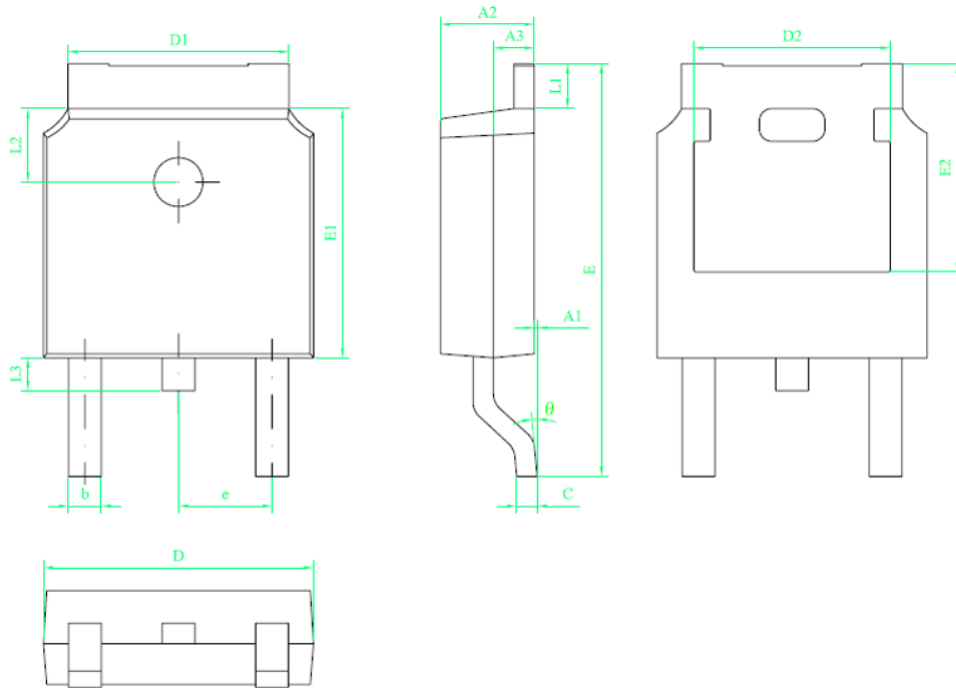


Figure8. Switching wave



YJD80N03A

■ 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. 胶体两端留胶总宽和宽度不超过0.50;
4. 所有单位为mm;



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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.

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