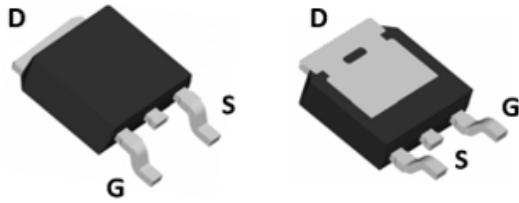
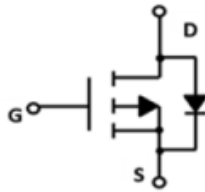


P-Channel Enhancement Mode Field Effect Transistor



TO-252



Product Summary

- V_{DS} -30V
- I_D -70A
- $R_{DS(ON)}$ (at $V_{GS}=-10V$) <6.0mohm
- $R_{DS(ON)}$ (at $V_{GS}=-4.5V$) <10mohm
- 100% UIS Tested
- 100% ∇V_{DS} Tested

General Description

- Trench Power LV MOSFET technology
- High density cell design for Low $R_{DS(ON)}$
- High Speed switching

Applications

- Battery management
- Load switch
- Power management

■ 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}	± 25	V
Drain Current	$T_C=25^\circ\text{C}$	I_D	-70	A
	$T_C=100^\circ\text{C}$		-44	
Pulsed Drain Current ^A		I_{DM}	-200	A
Total Power Dissipation	$T_C=25^\circ\text{C}$	P_D	110	W
	$T_C=100^\circ\text{C}$		44	
Total Power Dissipation	$T_A=25^\circ\text{C}$	P_D	2.5	W
Single Pulse Avalanche Energy ^B		E_{AS}	240	mJ
Thermal Resistance Junction-to-Case ^C		$R_{\theta JC}$	1.14	$^\circ\text{C}/\text{W}$
Thermal Resistance Junction-to-Ambient ^C		$R_{\theta JA}$	50	$^\circ\text{C}/\text{W}$
Junction and Storage Temperature Range		T_J, T_{STG}	-55~+150	$^\circ\text{C}$

■ Ordering Information (Example)

PREFERRED P/N	PACKING CODE	Marking	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
YJD70P03A	F2	YJD70P03A	2500	/	25000	13" reel



YJD70P03A

■ 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	T _J =25°C		-1	μA
			T _J =55°C		-5	
Gate-Body Leakage Current	I _{GSS}	V _{GS} = ±25V, V _{DS} =0V			±100	nA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D =-250μA	-1.2	-1.8	-2.8	V
Static Drain-Source On-Resistance	R _{DS(on)}	V _{GS} = -10V, I _D =-20A		4.5	6	mΩ
		V _{GS} = -4.5V, I _D =-18A		6.6	10	
Diode Forward Voltage	V _{SD}	I _S =-20A, V _{GS} =0V			-1.2	V
Maximum Body-Diode Continuous Current	I _S				-70	A
Dynamic Parameters						
Input Capacitance	C _{iss}	V _{DS} =-15V, V _{GS} =0V, f=1MHZ		6464		pF
Output Capacitance	C _{oss}			779		
Reverse Transfer Capacitance	C _{rss}			477		
Gate Resistance	R _g	Drain open, f=1Mhz		5.8		Ω
Switching Parameters						
Total Gate Charge	Q _g	V _{GS} =-10V, V _{DS} =-15V, I _D =-20A		111.7		nC
Gate-Source Charge	Q _{gs}			21.1		
Gate-Drain Charge	Q _{gd}			22.9		
Reverse Recovery Charge	Q _{rr}	I _F =-15A, di/dt=-100A/us		8.5		ns
Reverse Recovery Time	t _{rr}			24		
Turn-on Delay Time	t _{D(on)}	V _{GS} = -10V, V _{DD} = -15V, R _G =3Ω, R _L = 0.75Ω		15		ns
Turn-on Rise Time	t _r			75		
Turn-off Delay Time	t _{D(off)}			130		
Turn-off fall Time	t _f			80		

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

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

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

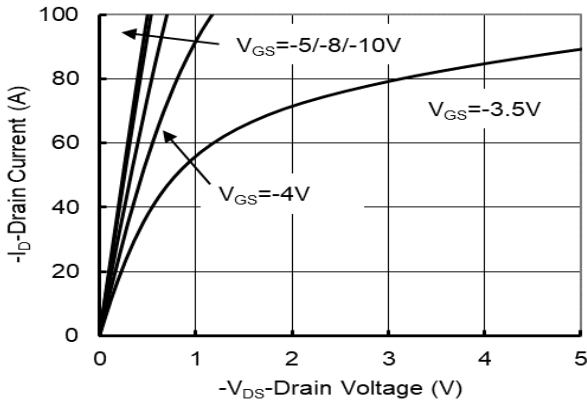


Figure1. Output Characteristics

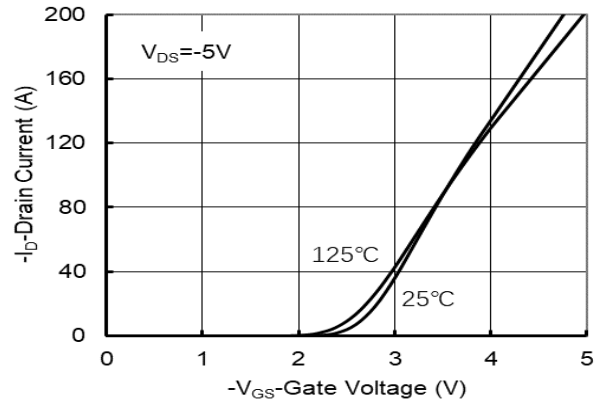


Figure2. Transfer Characteristics

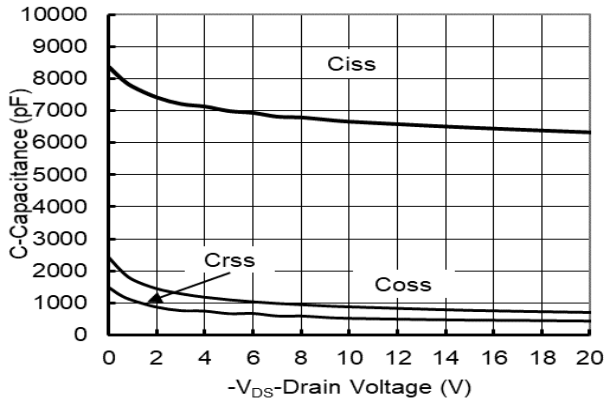


Figure3. Capacitance Characteristics

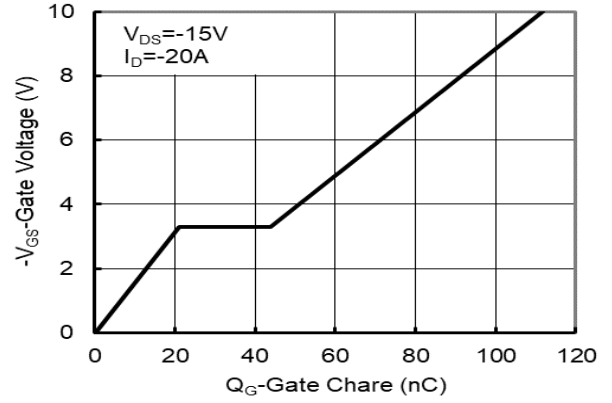


Figure4. Gate Charge

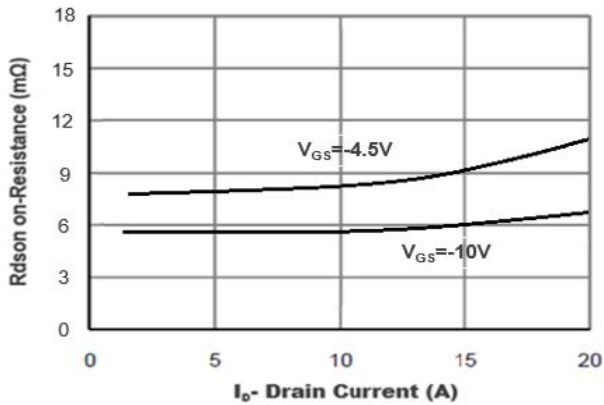


Figure5. Drain-Source on Resistance

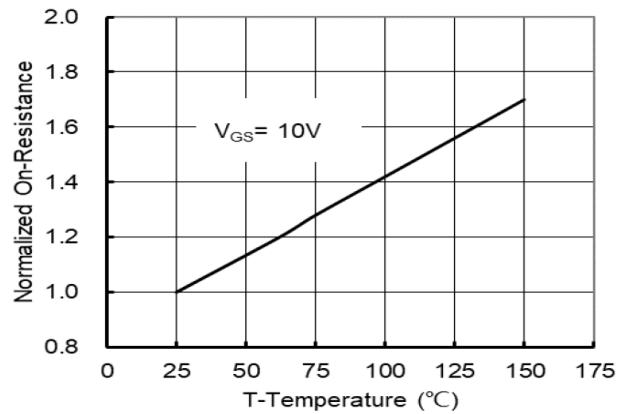


Figure6. Drain-Source on Resistance



YJD70P03A

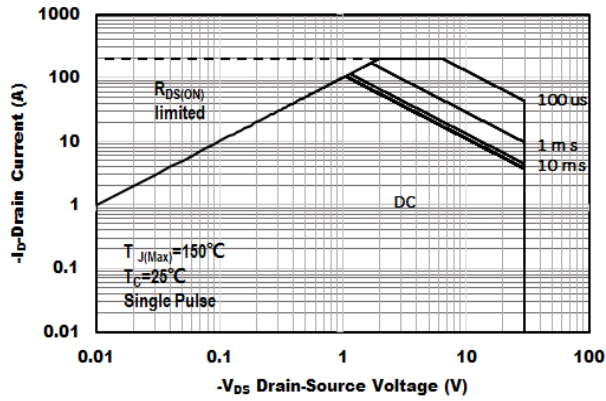


Figure7. Safe Operation Area

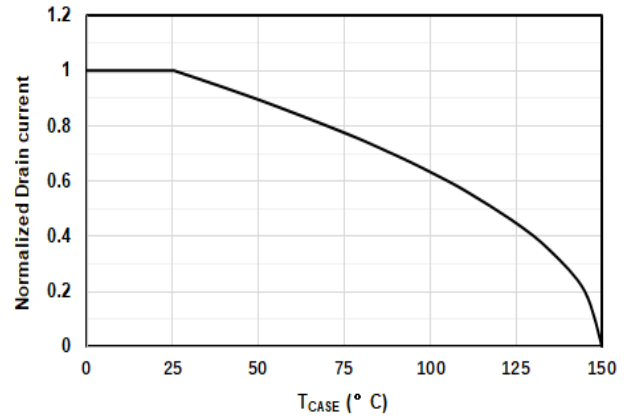


Figure8. Drain current vs. Case Temperature

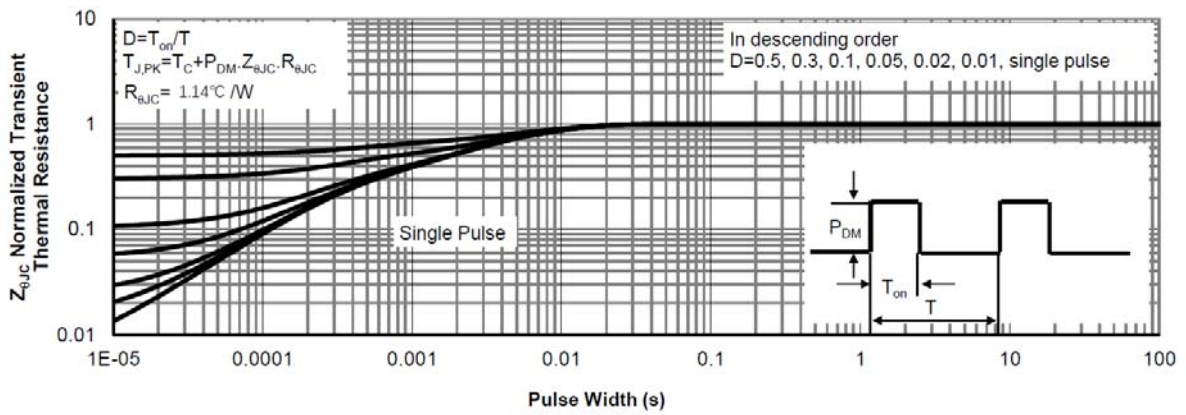
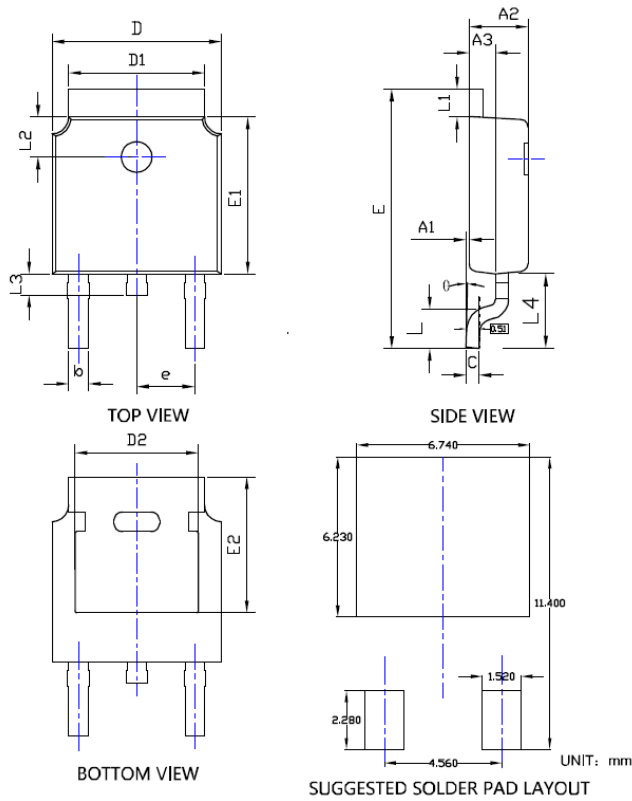


Figure9. Normalized Maximum Transient Thermal Impedance



YJD70P03A

■ TO-252 Package information



SYMBOL	DIMENSIONS					
	INCHES			Millimeter		
	MIN.	NDM.	MAX.	MIN.	NDM.	MAX.
A1	0.000	---	0.008	0.000	---	0.200
A2	0.087	0.091	0.094	2.200	2.300	2.400
A3	0.035	0.039	0.043	0.900	1.000	1.100
b	0.026	0.030	0.034	0.660	0.760	0.860
c	0.018	0.020	0.023	0.460	0.520	0.580
D	0.256	0.260	0.264	6.500	6.600	6.700
D1	0.203	0.209	0.215	5.150	5.300	5.450
D2	0.181	0.189	0.195	4.600	4.800	4.950
E	0.390	0.398	0.406	9.900	10.100	10.300
E1	0.236	0.240	0.244	6.000	6.100	6.200
E2	0.203	0.209	0.215	5.150	5.300	5.450
e	0.090BSC			2.286BSC		
L	0.049	0.059	0.069	1.250	1.500	1.750
L1	0.035	---	0.050	0.900	---	1.270
L2	0.055	---	0.075	1.400	---	1.900
L3	0.240	0.310	0.039	0.600	0.800	1.000
L4	0.114REF			2.900REF		
⌀	0*	---	10*	0*	---	10*

NOTE:
 1. PACKAGE BODY SIZES EXCLUDE MOLD FLASH AND GATE BURRS.
 2. TOLERANCE 0.1mm UNLESS OTHERWISE SPECIFIED.
 3. THE PAD LAYOUT IS FOR REFERENCE PURPOSES ONLY.



YJD70P03A

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](http://www.21yangjie.com) , or consult your nearest Yangjie's sales office for further assistance.



YJD70P03A

REV.	EFFECTIVE DATE	REVISION HISTORY	PREPARED
1.0	2020.10.20	New release	YanQiang He
1.1	2021.04.27	Change Ciss/Coss/Crss type value from 2504/323/283 to 6464/779/477; Cap, Gate charge and curve updated	YanQiang He

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for [MOSFET](#) category:

Click to view products by [Yangjie](#) manufacturer:

Other Similar products are found below :

[IRFD120](#) [JANTX2N5237](#) [2SK2267\(Q\)](#) [BUK455-60A/B](#) [TK100A10N1,S4X\(S](#) [MIC4420CM-TR](#) [VN1206L](#) [NDP4060](#) [SI4482DY](#)
[IRS2092STRPBF-EL](#) [IPS70R2K0CEAKMA1](#) [TK31J60W5,S1VQ\(O](#) [TK31J60W,S1VQ\(O](#) [TK16J60W,S1VQ\(O](#) [2SK2614\(TE16L1,Q\)](#)
[DMN1017UCP3-7](#) [EFC2J004NUZTDG](#) [P85W28HP2F-7071](#) [DMN1053UCP4-7](#) [NTE2384](#) [DMC2700UDMQ-7](#) [DMN2080UCB4-7](#)
[DMN61D9UWQ-13](#) [US6M2GTR](#) [DMN31D5UDJ-7](#) [DMP22D4UFO-7B](#) [IPS60R3K4CEAKMA1](#) [DMN1006UCA6-7](#) [DMN16M9UCA6-7](#)
[STF5N65M6](#) [IRF40H233XTMA1](#) [STU5N65M6](#) [DMN6022SSD-13](#) [DMN13M9UCA6-7](#) [DMTH10H4M6SPS-13](#) [IPS60R360PFD7SAKMA1](#)
[DMN2990UFB-7B](#) [SSM3K35CT,L3F](#) [IPLK60R1K0PFD7ATMA1](#) [2N7002W-G](#) [MCAC30N06Y-TP](#) [IPWS65R035CFD7AXKSA1](#)
[MCQ7328-TP](#) [SSM3J143TU,LXHF](#) [DMN12M3UCA6-7](#) [PJMF280N65E1_T0_00201](#) [PJMF380N65E1_T0_00201](#)
[PJMF280N60E1_T0_00201](#) [PJMF600N65E1_T0_00201](#) [PJMF900N65E1_T0_00201](#)