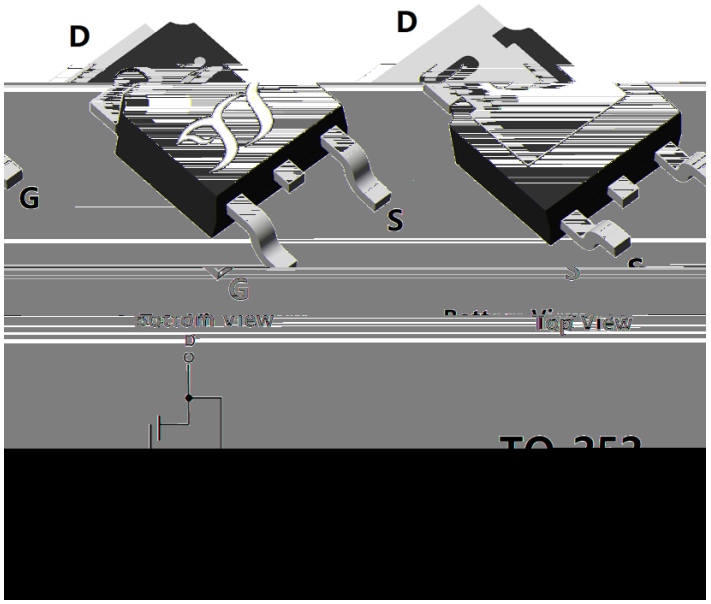
N-Channel Enhancement Mode Field Effect Transistor



Product Summary

V_{DS}	40 V
I_D	120 A
$R_{DS(ON)}$(at V_{GS}=10V)	3.5 mohm
$R_{DS(ON)}$(at V_{GS}=4.5V)	4.8 mohm
100% EAS Tested	
100% V_{DS} Tested	

General Description

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

Applications

DC-DC Converters
Power management functions
Backlighting

Absolute Maximum Ratings (T_A=25 unless otherwise noted)

Parameter		Symbol	Limit	Unit
Drain-source Voltage		V_{DS}	40	V
Gate-source Voltage		V_{GS}	20	V
Drain Current	T_C=25	I_D	120	A
	T_C=100		76	
Pulsed Drain Current [A]		I_{DM}	390	A
Total Power Dissipation @ T_C=25 [B]		P_D	110	W
Total Power Dissipation @ T_C=100 [B]		P_D	44	W
Total Power Dissipation @ T_A=25 [C]		P_D	6.2	W
Single Pulse Avalanche Energy [D]		E_{AS}	272	mJ
Thermal Resistance Junction-to-Case		R_{JC}	1.14	/ W
Thermal Resistance Junction-to-Ambient		R_{JA}	20	/ W
Junction and Storage Temperature Range		T_J ,T_{STG}	-55 +150	

Ordering Information (Example)

PREFERED P/N	PACKING CODE	Marking	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
YJD120N04A	F1/F2	YJD120N04A	2500	/	25000	13 reel

Electrical Characteristics (T_J=25 unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max

Typical Performance Characteristics

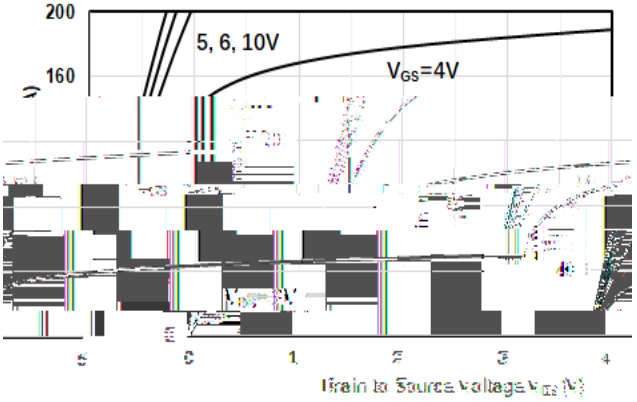


Figure1. Output Characteristics

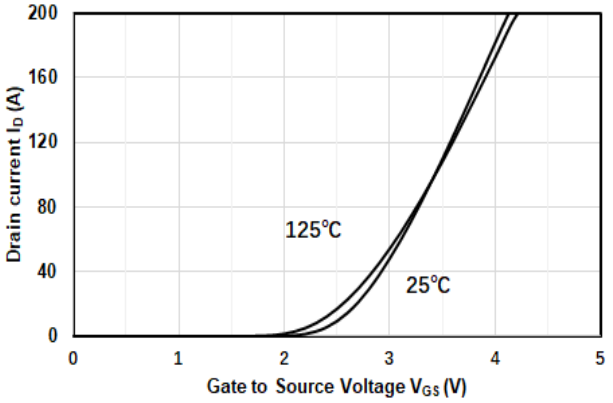


Figure2. Transfer Characteristics

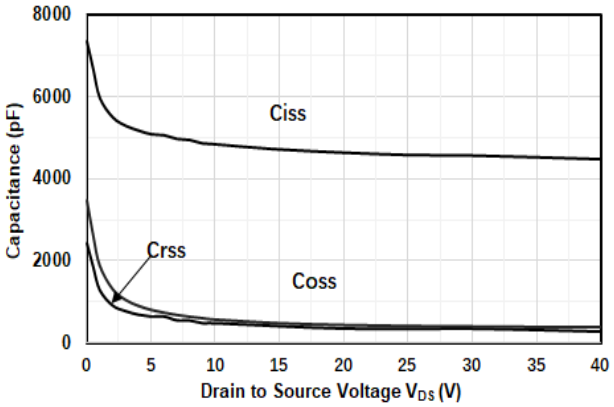


Figure3. Capacitance Characteristics

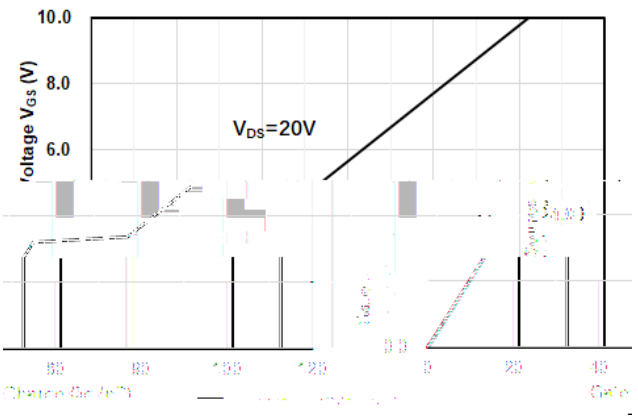


Figure4. Gate Charge

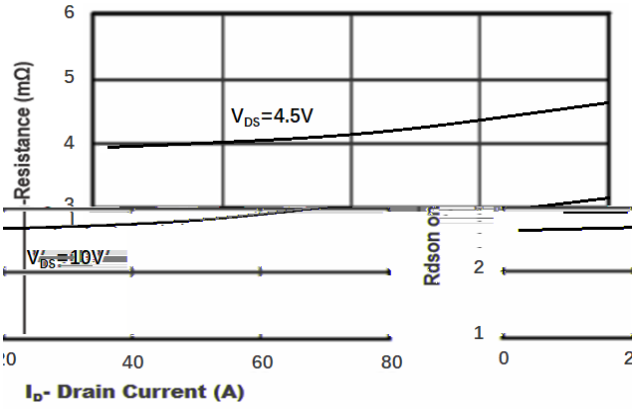


Figure5. Drain-Source on Resistance

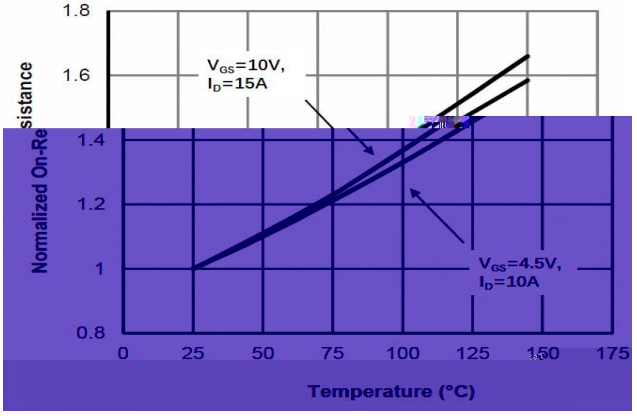


Figure6. Drain-Source on Resistance

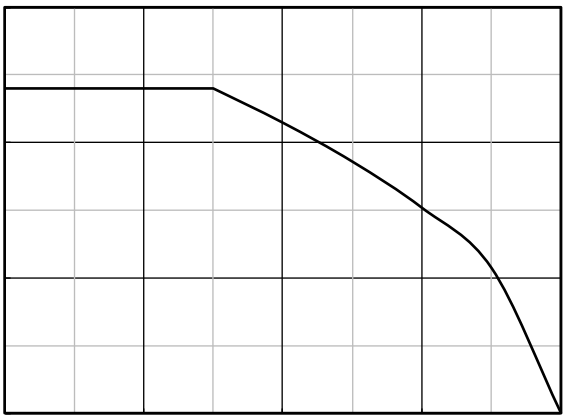
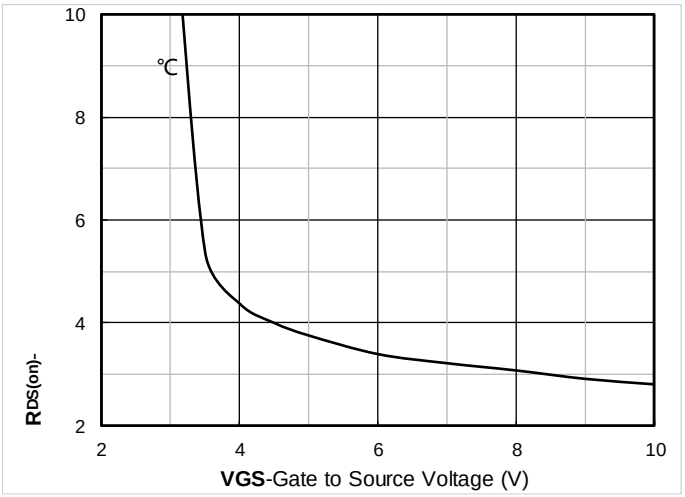
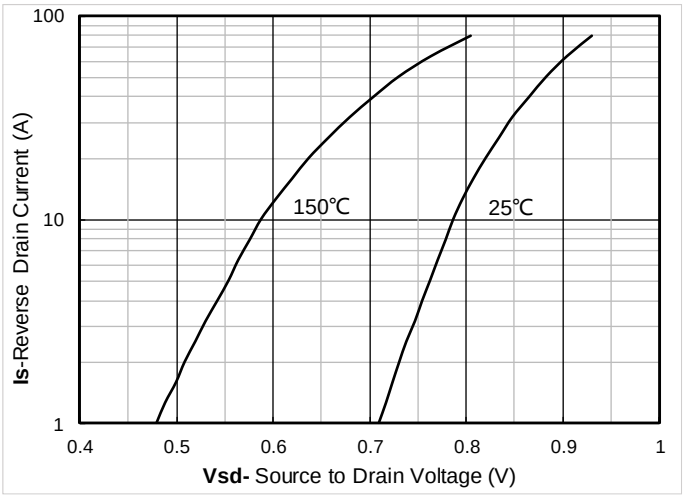


Figure7. Safe Operation Area

Figure8. Drain current vs. Case Temperature





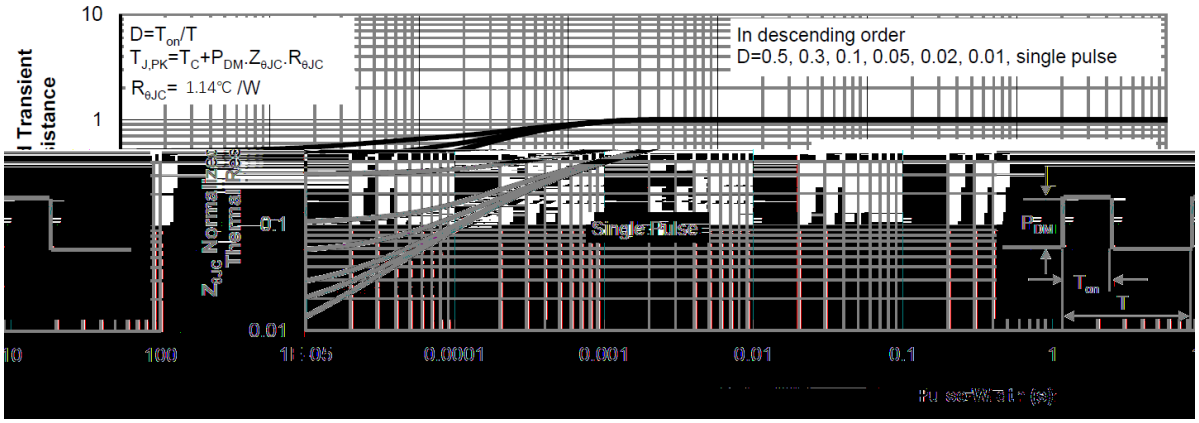
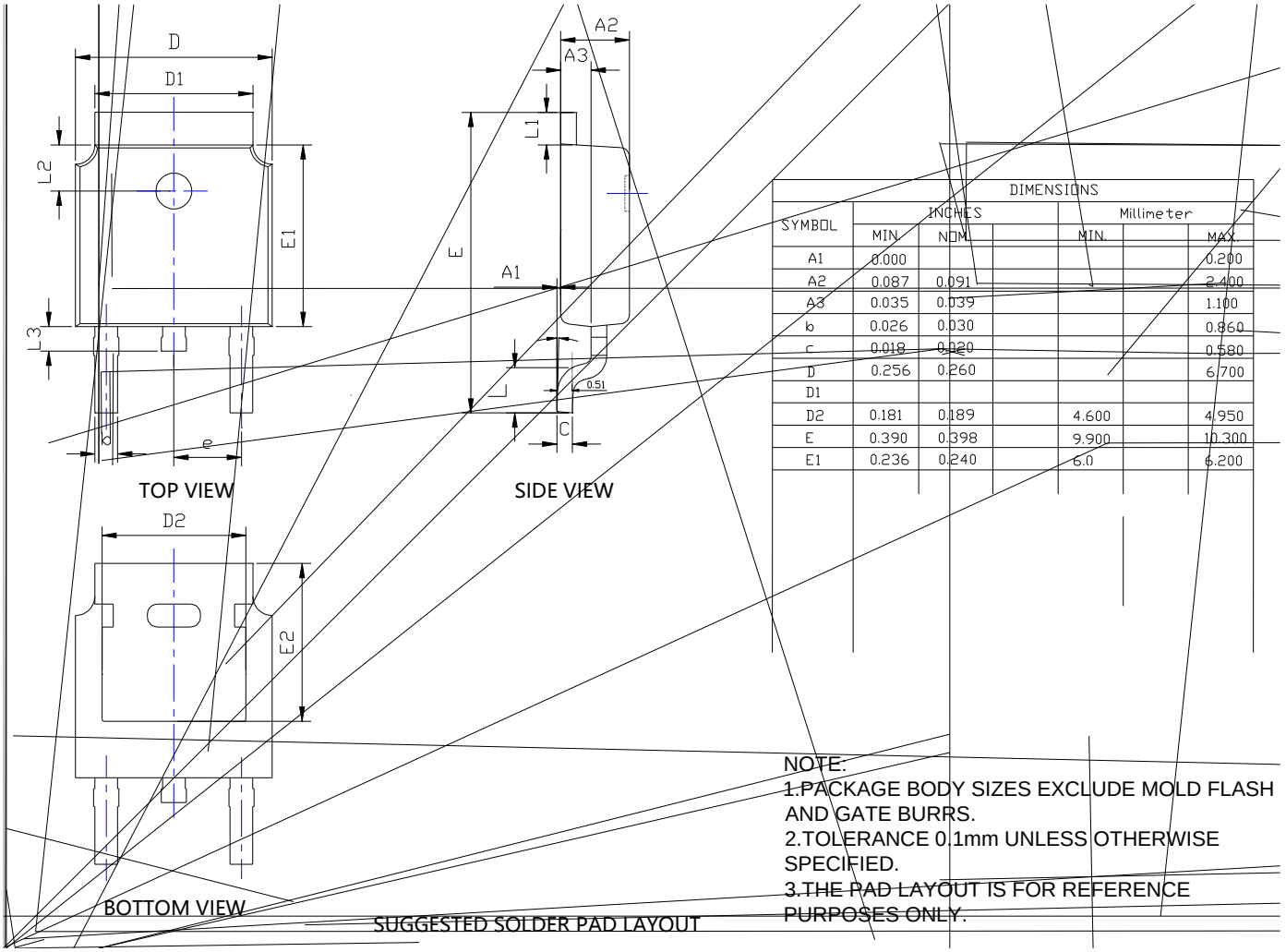


Figure13. Normalized Maximum Transient Thermal Impedance

TO-252-B Package information



DIMENSIONS					
SYMBOL	INCHES		Millimeter		
	MIN.	NOM.	MIN.		MAX.
A1	0.000				0.200
A2	0.087	0.091			2.400
A3	0.035	0.039			1.100
b	0.026	0.030			0.860
c	0.018	0.020			0.580
D	0.256	0.260			6.700
D1					
D2	0.181	0.189	4.600		4.950
E	0.390	0.398	9.900		10.300
E1	0.236	0.240	6.0		6.200

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.

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