



YJB70G10A

N-Channel Enhancement Mode Field Effect Transistor

Product Summary

V_{DS}	100V
I_D	70A
$R_{DS(on)}$ (at $V_{GS}=10V$)	8.6 mohm
$R_{DS(on)}$ (at $V_{GS}=4.5V$)	11 mohm
100% EAS Tested	
100% V_{DS} Tested	

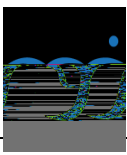
General Description

- Low $R_{DS(on)}$ & FOM
- Extremely low switching loss
- Excellent stability and uniformity
- Fast switching and soft recovery
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Halogen Free

Applications

- Power switching application

100% 100%



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Electrical Characteristics (T_j=25 unless otherwise noted)

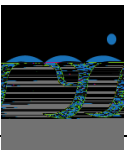
Parameter	Symbol	Conditions	Min	Typ	Max	Units
Static Parameter						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} = 0V, I _D =250	100			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =100V, V _{GS} =0V			1	
Gate-Body Leakage Current	I _{GSS}	V _{GS} = 20V, V _{DS} =0V			100	nA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D =250	1	1.8	3	V
Static Drain-Source On-Resistance	R _{DS(on)}	V _{GS} = 10V, I _D =20A		7.2	8.6	m
		V _{GS} = 4.5V, I _D =20A		8.8	11	m
Diode Forward Voltage	V _{SD}	I _S =20A, V _{GS} =0V			1.3	V
Maximum Body-Diode Continuous Current	I _S				70	A
Gate resistance	R _G	f= 1 MHz, Open drain		0.68		
Dynamic Parameters						
Input Capacitance	C _{iss}	V _{DS} =50V, V _{GS} =0V, f=1MHZ		2270		pF
Output Capacitance	C _{oss}			797		
Reverse Transfer Capacitance	C _{rss}			36		
Switching Parameters						
Total Gate Charge	Q _g	V _{GS} =10V, V _{DS} =50V, I _D =25A		32		nC
Gate-Source Charge	Q _{gs}			11.1		
Gate-Drain Charge	Q _{gd}			4.78		
Reverse Recovery Charge	Q _{rr}	I _F =20A, di/dt=100A/us		84		nC
Reverse Recovery Time	t _{rr}			51.5		
Turn-on Delay Time	t _{D(on)}	V _{GS} =10V, V _{DD} =50V, I _D =25A R _{GEN} =2.2		51		ns
Turn-on Rise Time	t _r			14.4		
Turn-off Delay Time	t _{D(off)}			69.2		
Turn-off fall Time	t _f			20.6		

A. Repetitive rating; pulse width limited by max. junction temperature.

B. V_{DD}=50V, R_G 0.5mH, I_{AS}=25A.

C. Pd is based on max. junction temperature, using junction-case thermal resistance.

D. The value of R_{JA} is measured with the device mounted on 1in2 FR-4 board with 2oz. Copper, in a still air environment with T_A=25 C. The Power dissipation P_{DSM} is based on R_{JA} C. The value in any given application depends on the user's specific board design.



Typical Performance Characteristics

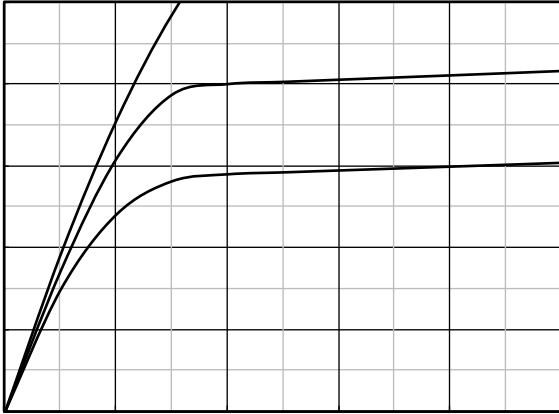


Figure1. Output Characterii eeW*nBT/F5 9.96 Tf1 0 0 1 86.664 560.35 T re4 re00008884 re 0 59W*nBT/F5 9.96 Tf1

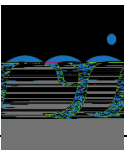


Figure7. Drain current

Figure8.Safe Operation Area

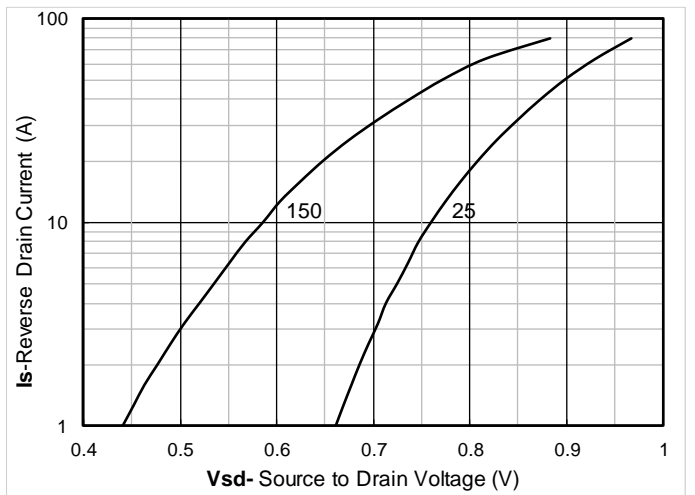
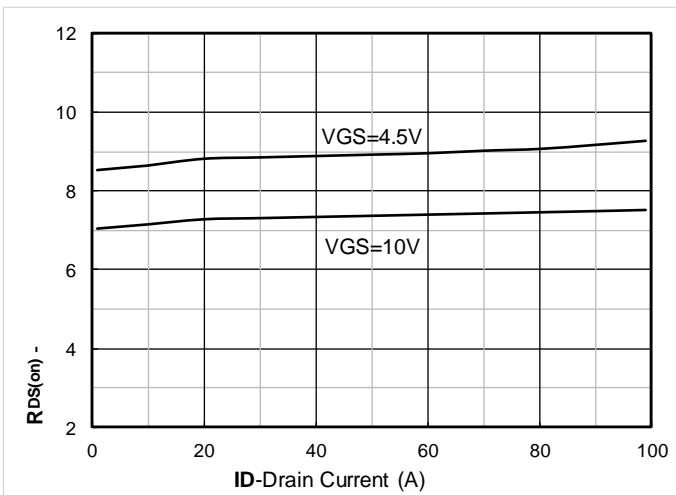


Figure 9. $R_{DS(on)}$ VS Drain Current

Figure 10. Forward characteristics of reverse diode

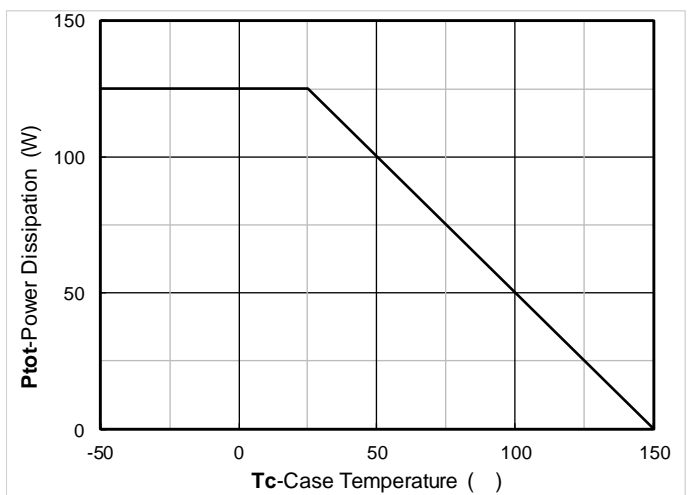
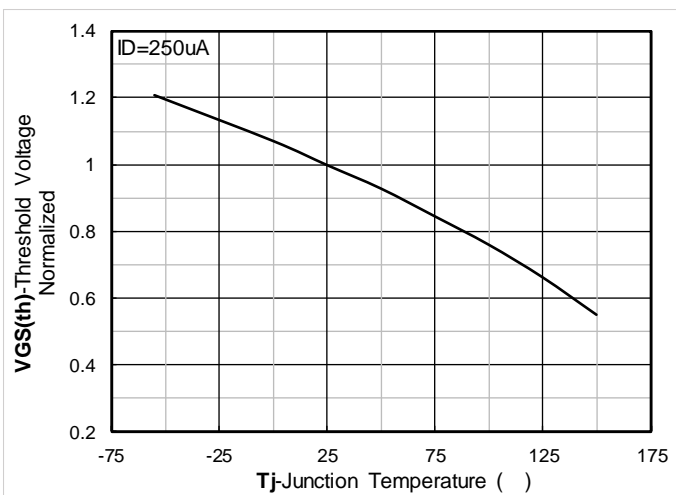
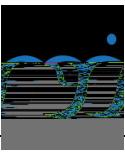


Figure 1



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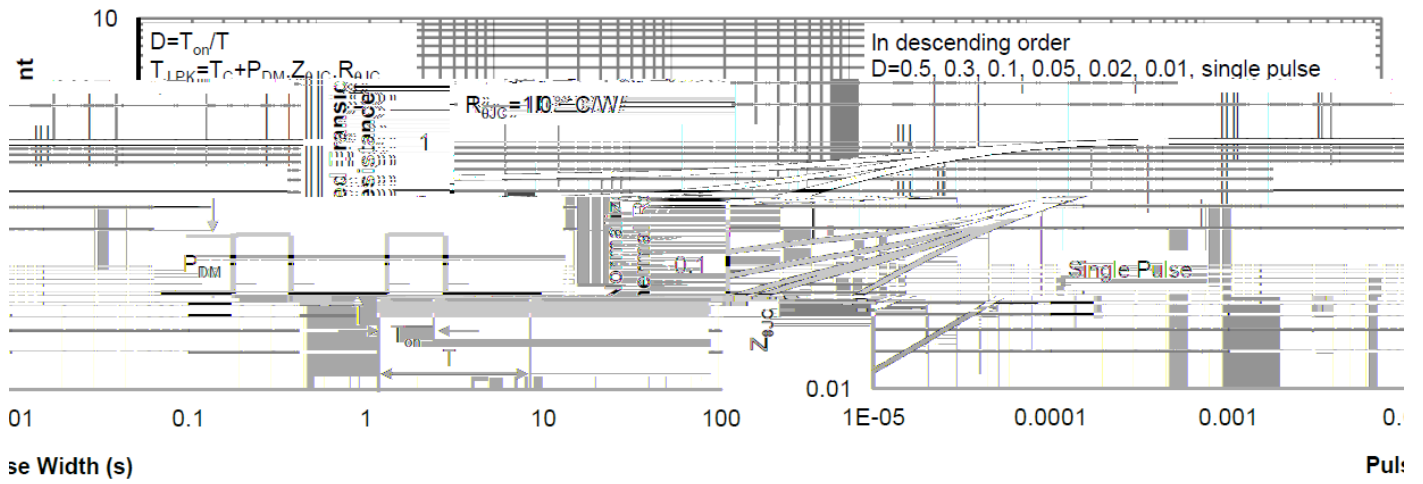
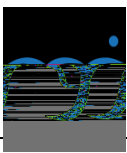
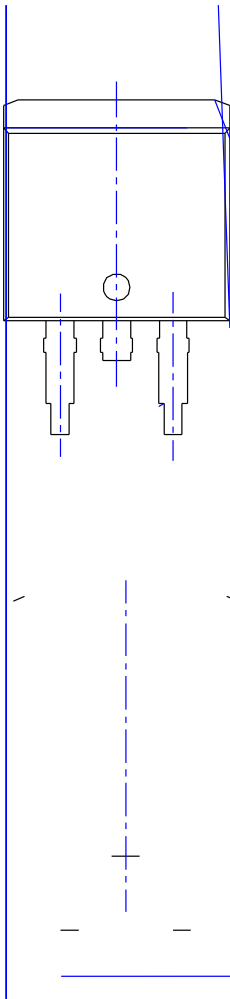


Figure 13. Normalized Maximum Transient thermal impedance



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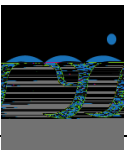
TO-263-HY Package information



SYMBOL	DIMENSIONS					
	INCHES			Millimeter		
	MIN.	NDM.	MAX.	MIN.	NDM.	MAX.
A1	0.000	---	0.010	0.000	---	0.250
A2	0.174	0.180	0.186	4.430	4.580	4.730
b	0.028	0.032	0.036	0.720	0.820	0.920
b2	0.046	0.050	0.054	1.180	1.280	1.380
c	0.013	0.015	0.018	0.330	0.390	0.450
c2	0.048	0.050	0.053	1.220	1.280	1.340
D1	0.295	0.307	0.319	7.500	7.800	8.100
D2	0.303	0.315	0.327	7.700	8.000	8.300
E	0.571	0.591	0.610	14.500	15.000	15.500
E1	0.337	0.341	0.348	8.550	8.700	8.850
E2	0.276	0.287	0.299	7.000	7.300	7.600
e	0.200BSC			5.080BSC		
L	0.070	---	0.110	1.790	---	2.790
L1	0.044	---	0.056	1.120	---	1.420
L2	0.030	---	0.070	0.770	---	1.770
L3	0.197REF			5.000REF		
	0°	---	8°	0°	---	8°

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.

UNIT: mm



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