



YJR20N06A

N-Channel Enhancement Mode Field Effect Transistor

Product Summary

V_{DS}	60V
D	20A
$R_{DS(ON)}$ (at $V_{GS}=10V$)	43mohm
$R_{DS(ON)}$ (at $V_{GS}=4.5V$)	47mohm
100% EAS Tested	
100% V_{DS} Tested	

General Description

MV MOSFET technology
Excellent package for heat dissipation
High density cell design for low $R_{DS(ON)}$
Epoxy Meets UL 94 V-0 Flammability Rating
Halogen 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}	60	V
Gate-source Voltage	V_{GS}	≤ 20	V
Drain Current	I_D	$T_C=25$	20
		$T_C=100$	12
Pulsed Drain Current ^A	I_{DM}	60	A



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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	60			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =60V, V _{GS} =0V	T _J =25		1	
			T _J =150		100	
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	1.0	1.5	2.5	V
Static Drain-Source On-Resistance	R _{DS(ON)}	V _{GS} = 10V, I _D =20A		29	43	m
		V _{GS} = 4.5V, I _D =10A		31	47	
Diode Forward Voltage	V _{SD}	I _S =10A, V _{GS} =0V		0.8	1.2	V
Maximum Body-Diode Continuous Current	I _S				20	A
Dynamic Parameters						
Input Capacitance	C _{iss}	V _{DS} =30V, V _{GS} =0V, f=1MHZ		1018		pF
Output Capacitance	C _{oss}			70		
Reverse Transfer Capacitance	C _{rss}			62		
Switching Parameters						
Total Gate Charge	Q _g	V _{GS} =10V, V _{DS} =30V, I _D =10A		26		nC
Gate-Source Charge	Q _{gs}			5.4		
Gate-Drain Charge	Q _{gd}			6.5		
Reverse Recovery Charge	Q _{rr}	I _r =20A, di/dt=500A/us		11.7		
Reverse Recovery Time	t _{rr}			23		
Turn-on Delay Time	t _{D(on)}	V _{GS} =10V, V _{DD} =30V, I _D =2A, R _L =1 R _{GEN} =3		10		ns
Turn-on Rise Time	t _r			20		
Turn-off Delay Time	t _{D(off)}			29		
Turn-off fall Time	t _f			22		

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

B. T_J=25, V_{DD}=40V, V_G=10V, L=0.5mH, I_{AS}=11A

C. R_{JA} 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_{JC} is guaranteed by design, while R_{JA} is determined by the board design. The maximum rating presented here is based on mounting on a 1 in 2 pad of 2oz copper.



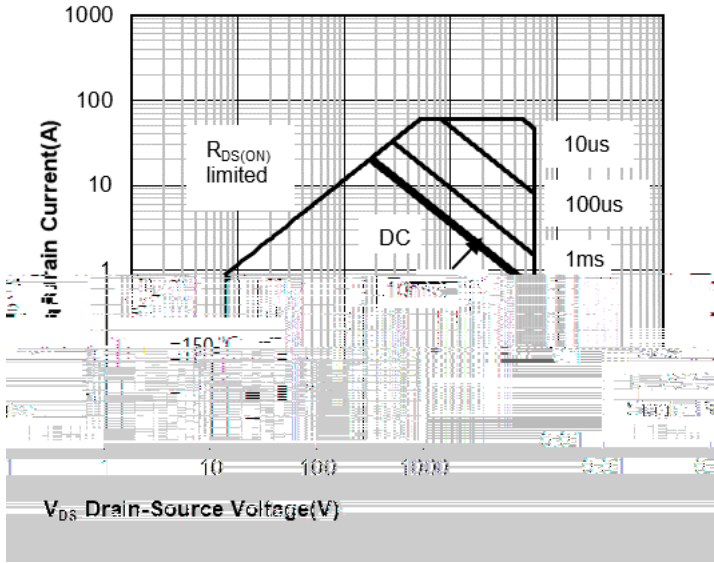


Figure 7. Safe Operation Area

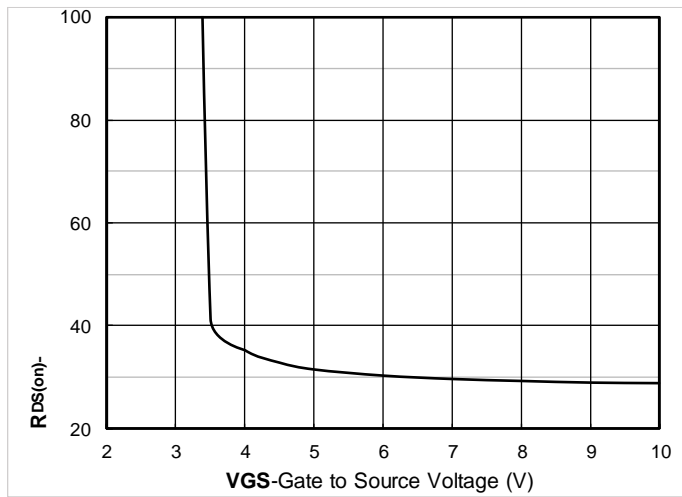


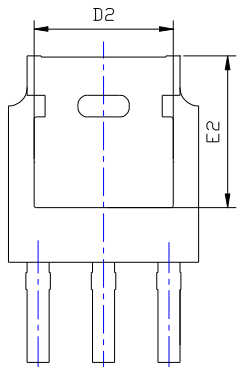
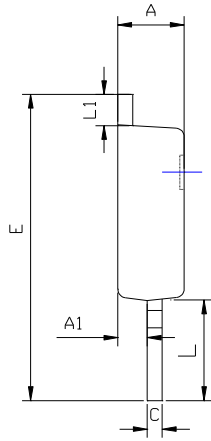
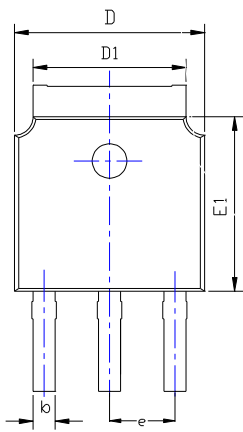
Figure 9. On-





YJR20N06A

TO-251 Package Information



SYMBOL	DIMENSIONS			
	INCHES		Millimeter	
	MIN.	MAX.	MIN.	MAX.
A	0.087	0.094	2.200	2.400
A				

NOTE:
1.PACKAGE BODY SIZES EXCLUDE MOLD FLASH AND GATE BURRS.
2.TOLERANCE 0.1mm UNLESS OTHERWISE SPECIFIED.



YJR20N06A

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