



N-Channel Enhancement Mode Field Effect Transistor

Product Summary

- V_{DS} 120V
- I_D 90A
- $R_{DS(ON)}$ (at $V_{GS}=10V$) 9m Ω
- $R_{DS(ON)}$ (at $V_{GS}=4.5V$) 11m Ω
- 100% EAS Tested
- 100% V_{DS} Tested

General Description

- Split gate trench 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

- Power switching application
- Uninterruptible power supply
- DC-DC convertor

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

Parameter		Symbol	Limit	Unit
Drain-source Voltage		V_{DS}	120	V
Gate-source Voltage		V_{GS}	± 20	V
Drain Current	$T_A=25^\circ\text{C}$	I_D	11	A
	$T_A=100^\circ\text{C}$		7	
	$T_C=25^\circ\text{C}$		90	
	$T_C=100^\circ\text{C}$		56	



YJP90G12A

■ Electrical Characteristics ($T_J=25$ unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Static Parameter						
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V, I_D=250\mu A$	120	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=120V, V_{GS}=0V$	-	-	1	μA
		$V_{DS}=120V, V_{GS}=0V, T_J=150^\circ C$	-	-	100	
Gate-Body Leakage Current	I_{GSS}	$V_{GS}=\pm 20V, V_{DS}=0V$	-	-	± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	1	2	3	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V, I_D=45A$	-	7	9	m Ω
		$V_{GS}=10V, I_D=20A$		7	9	
		$V_{GS}=4.5V, I_D=20A$	-	8.5	11	



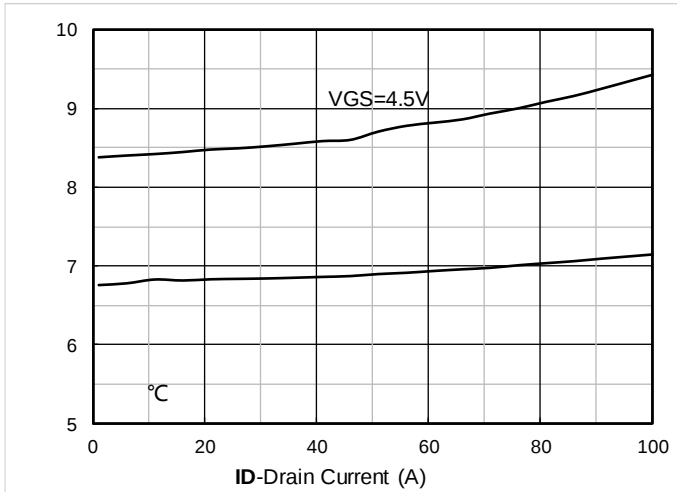


Figure 7. $R_{DS(on)}$ VS Drain Current

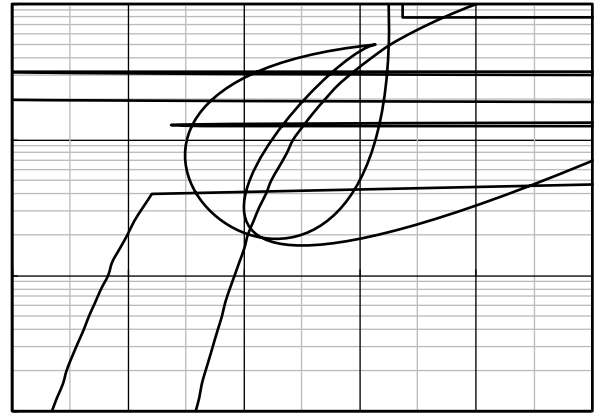


Figure 8. Forward characteristics of reverse diode

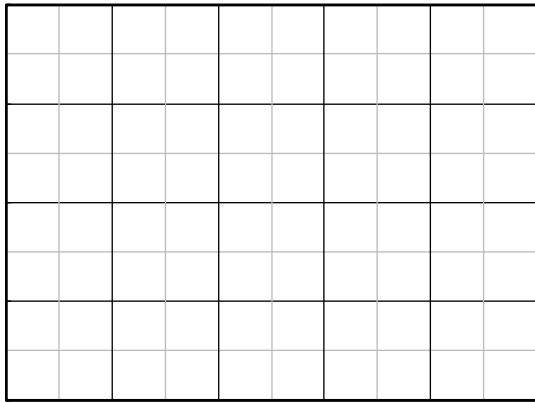


Figure 9. Normalized breakdown voltage

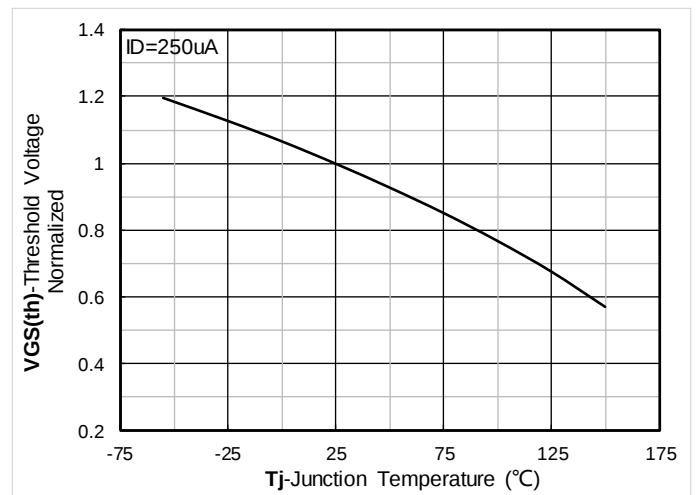


Figure 10. Normalized Threshold voltage

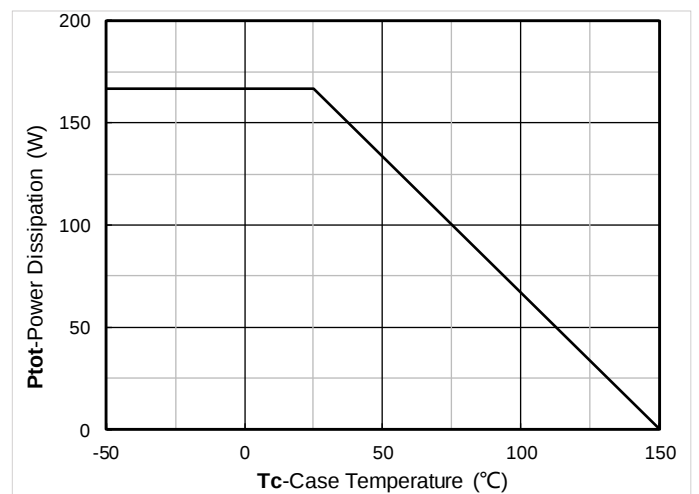


Figure 11. Current dissipation

Figure 12. Power dissipation



■ TO-220AB-D Package information

