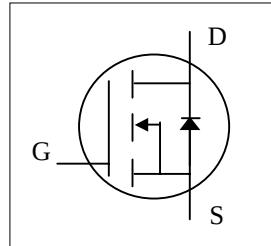


- ▼ 100% UIS Test
- ▼ Simple Drive Requirement
- ▼ Fast Switching Characteristic
- ▼ RoHS Compliant & Halogen-Free

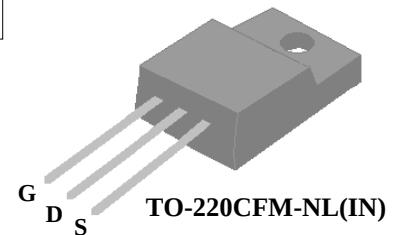


BV_{DSS}	600V
$R_{DS(ON)}$	0.75 Ω
I_D^3	10A

Description

XP60AN750 series are innovated design and silicon process technology to achieve the lowest possible on-resistance and fast switching performance. It provides the designer with an extreme efficient device for use in a wide range of power applications.

The TO-220CFM package is widely preferred for all commercial-industrial through hole applications. The mold compound provides a high isolation voltage capability and low thermal resistance between the tab and the external heat-sink.



Absolute Maximum Ratings@ $T_j=25^\circ\text{C}$ (unless otherwise specified)

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	600	V
V_{GS}	Gate-Source Voltage	± 30	V
$I_D@T_C=25^\circ\text{C}$	Drain Current, V_{GS} @ 10V ³	10	A
I_{DM}	Pulsed Drain Current ¹	40	A
$P_D@T_C=25^\circ\text{C}$	Total Power Dissipation	36.7	W
$P_D@T_A=25^\circ\text{C}$	Total Power Dissipation	1.92	W
E_{AS}	Single Pulse Avalanche Energy ⁴	32	mJ
T_{STG}	Storage Temperature Range	-55 to 150	$^\circ\text{C}$
T_J	Operating Junction Temperature Range	-55 to 150	$^\circ\text{C}$

Thermal Data

Symbol	Parameter	Value	Units
R_{thj-c}	Maximum Thermal Resistance, Junction-case	3.4	$^\circ\text{C}/\text{W}$
R_{thj-a}	Maximum Thermal Resistance, Junction-ambient	65	$^\circ\text{C}/\text{W}$

Electrical Characteristics@T_j=25°C(unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Units
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =250uA	600	-	-	V
R _{DS(ON)}	Static Drain-Source On-Resistance ²	V _{GS} =10V, I _D =5A	-	-	0.75	Ω
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =250uA	2	-	4	V
g _{fs}	Forward Transconductance	V _{DS} =20V, I _D =5A	-	15	-	S
I _{DSS}	Drain-Source Leakage Current	V _{DS} =480V, V _{GS} =0V	-	-	100	uA
I _{GSS}	Gate-Source Leakage	V _{GS} =±30V, V _{DS} =0V	-	-	±1	uA
Q _g	Total Gate Charge	I _D =10A	-	37	59.2	nC
Q _{gs}	Gate-Source Charge	V _{DS} =480V	-	9	-	nC
Q _{gd}	Gate-Drain ("Miller") Charge	V _{GS} =10V	-	11	-	nC
t _{d(on)}	Turn-on Delay Time	V _{DD} =300V	-	13	-	ns
t _r	Rise Time	I _D =10A	-	24	-	ns
t _{d(off)}	Turn-off Delay Time	R _G =9.1Ω	-	48	-	ns
t _f	Fall Time	V _{GS} =10V	-	33	-	ns
C _{iss}	Input Capacitance	V _{GS} =0V	-	1680	2688	pF
C _{oss}	Output Capacitance	V _{DS} =100V	-	72	-	pF
C _{rss}	Reverse Transfer Capacitance	f=1.0MHz	-	9	-	pF
R _g	Gate Resistance	f=1.0MHz	-	2.5	5	Ω

Source-Drain Diode

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Units
V _{SD}	Forward On Voltage ²	I _S =5A, V _{GS} =0V	-	-	1.5	V
t _{rr}	Reverse Recovery Time	I _S =10A, V _{GS} =0V	-	450	-	ns
Q _{rr}	Reverse Recovery Charge	di/dt=100A/μs	-	3.7	-	uC

Notes:

- 1.Pulse width limited by max. junction temperature.
- 2.Pulse test
- 3.Ensure that the junction temperature does not exceed T_{Jmax}.
- 4.Starting T_j=25°C , V_{DD}=90V , L=1mH , R_G=25Ω , V_{GS}=10V

THIS PRODUCT IS SENSITIVE TO ELECTROSTATIC DISCHARGE, PLEASE HANDLE WITH CAUTION.

USE OF THIS PRODUCT AS A CRITICAL COMPONENT IN LIFE SUPPORT OR OTHER SIMILAR SYSTEMS IS NOT AUTHORIZED.

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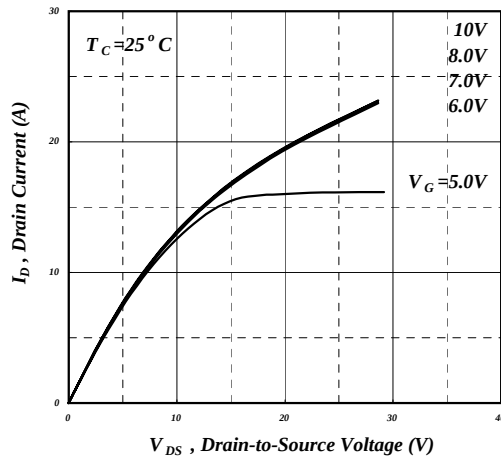


Fig 1. Typical Output Characteristics

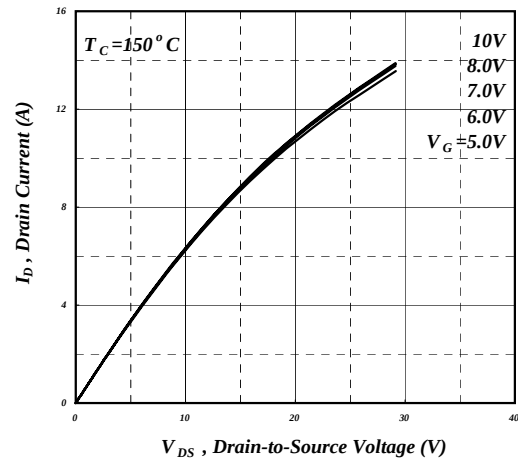


Fig 2. Typical Output Characteristics

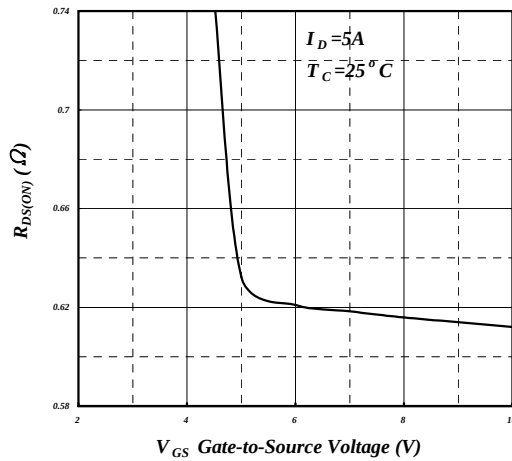
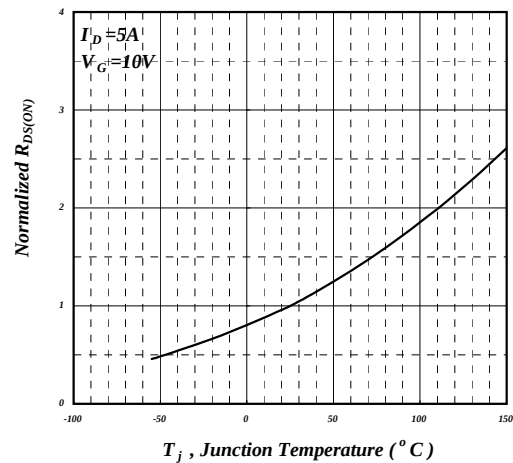
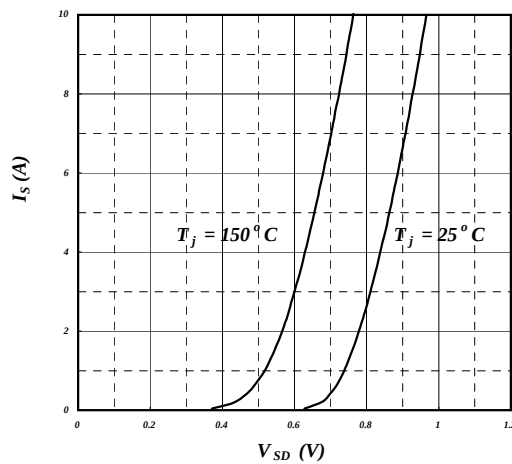


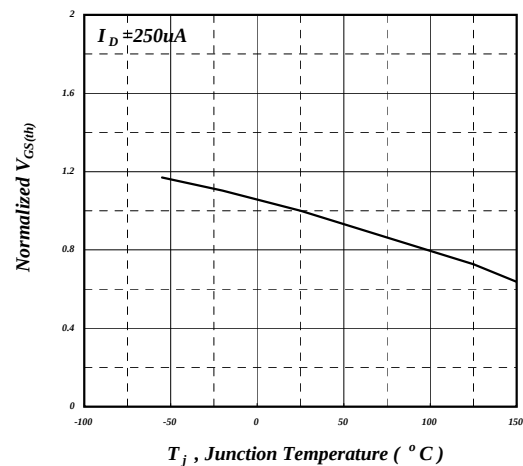
Fig 3. On-Resistance v.s. Gate Voltage



**Fig 4. Normalized On-Resistance
v.s. Junction Temperature**



**Fig 5. Forward Characteristic of
Reverse Diode**



**Fig 6. Gate Threshold Voltage v.s.
Junction Temperature**

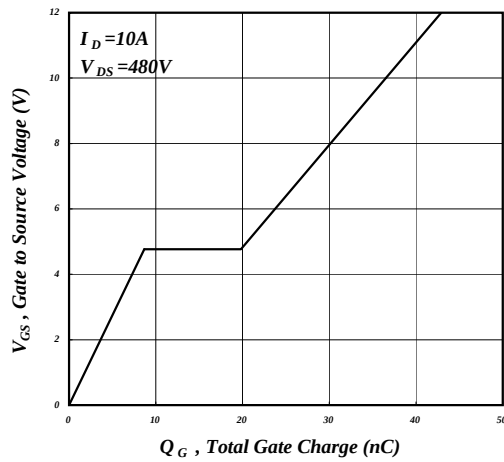


Fig 7. Gate Charge Characteristics

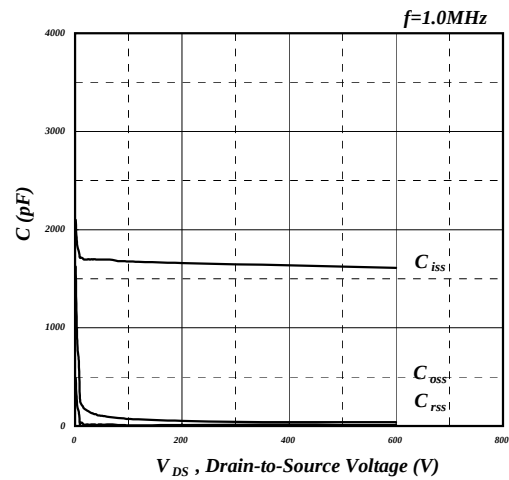


Fig 8. Typical Capacitance Characteristics

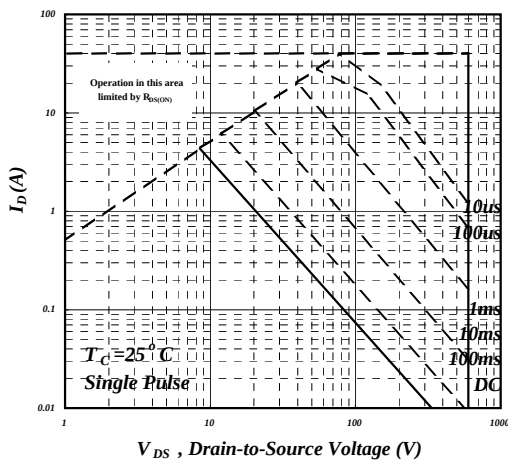


Fig 9. Maximum Safe Operating Area

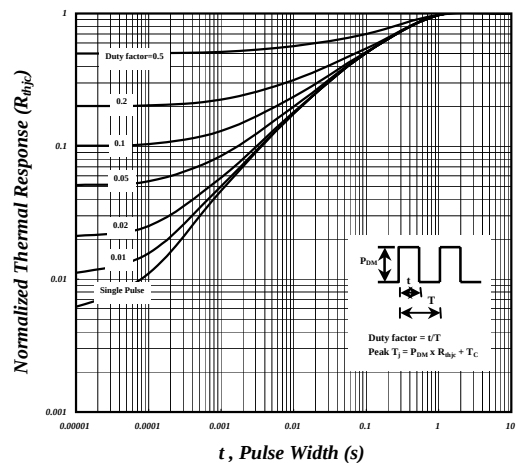


Fig10. Effective Transient Thermal Impedance

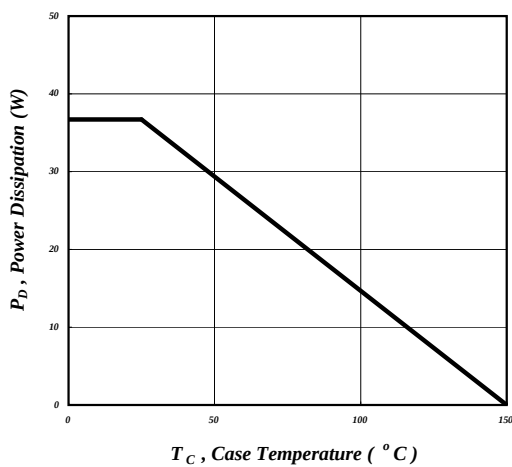


Fig 11. Total Power Dissipation

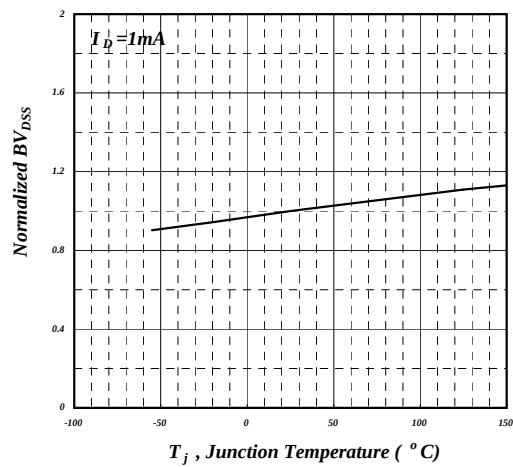
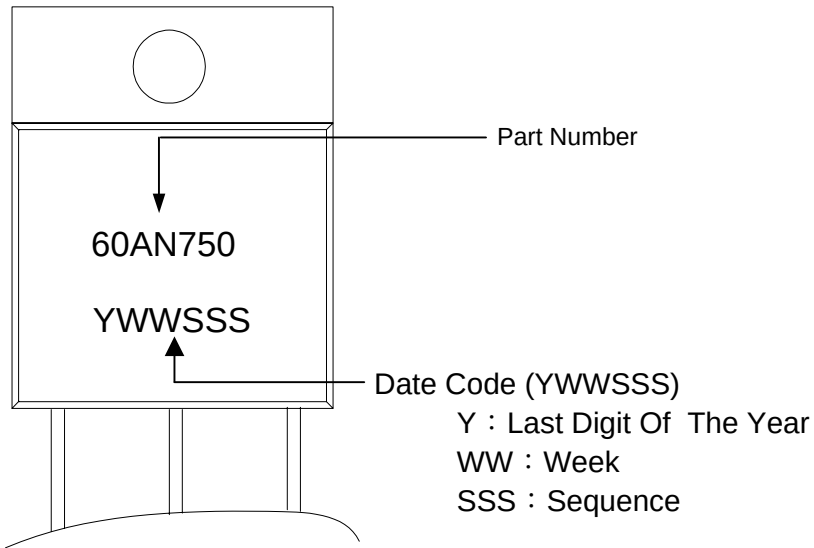
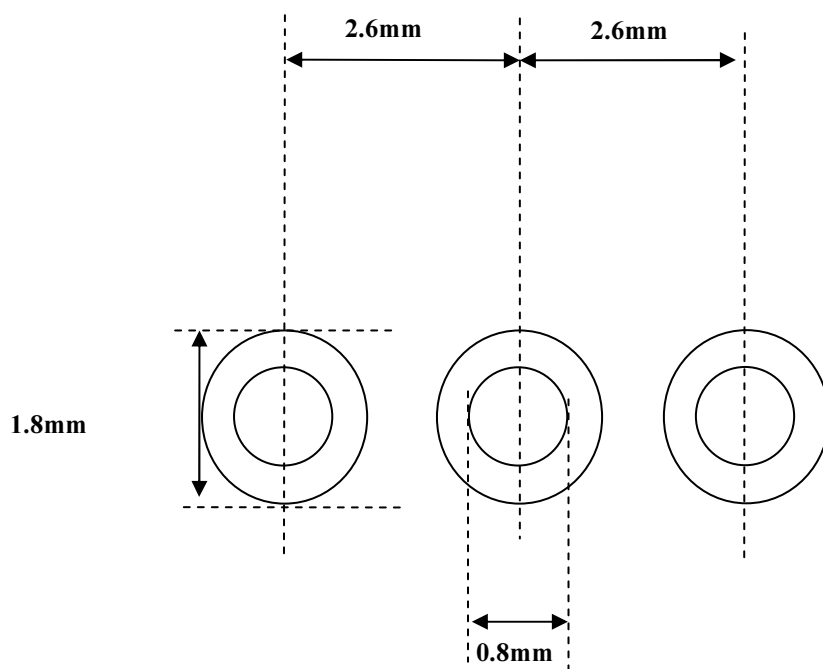


Fig 12. Normalized BV_{DS} v.s. Junction Temperature

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