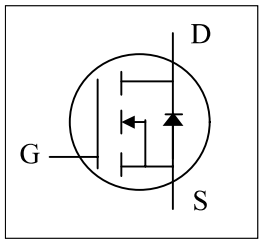
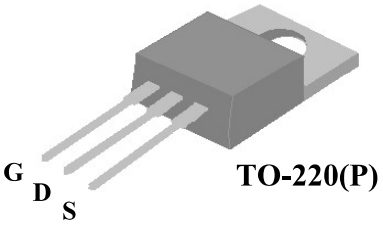
N-Channel Enhancement Mode Power MOSFET

- **Simple Drive Requirement**
- **Low On-resistance**
- **Fast Switching Characteristic**
- **RoHS Compliant & Halogen-Free**



BV_{DSS}	55V
$R_{DS(ON)}$	7.8mΩ
I_D	110A



Description

AP3205 series are from Advanced Power 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-220 package is widely preferred for all commercial-industrial through hole applications. The low thermal resistance and low package cost contribute to the worldwide popular package.

Absolute Maximum Ratings@T_j=25°C(unless otherwise specified)

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	55	V
V_{GS}	Gate-Source Voltage	±20	V
I_D@T_C=25℃	Drain Current, V_{GS} @ 10V	110	A
I_D@T_C=100℃	Drain Current, V_{GS} @ 10V	70	A
I_{DM}	Pulsed Drain Current[1]	400	A
P_D@T_C=25℃	Total Power Dissipation	187.5	W
P_D@T_A=25℃	Total Power Dissipation	2.41	W
E_{AS}	Single Pulse Avalanche Energy[3]	269	mJ
T_{STG}	Storage Temperature Range	-55 to 175	℃
T_J	Operating Junction Temperature Range	-55 to 175	℃

Thermal Data

Symbol	Parameter	Value	Units
Rthj-c	Maximum Thermal Resistance, Junction-case	0.8	℃/W
Rthj-a	Maximum Thermal Resistance, Junction-ambient	62	℃/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	55	-	-	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance[2]	V_{GS}=10V, I_D=62A	-	-	12	mΩ
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}=V_{GS}, I_D=250uA	2	-	4	V
g_{fs}	Forward Transconductance	V_{DS}=10V, I_D=62A	-	105	-	S
I_{DSS}	Drain-Source Leakage Current	V_{DS}=44V, V_{GS}=0V	-	-	10	uA
I_{GSS}	Gate-Source Leakage	V_{GS}= ±20V, V_{DS}=0V	-	-	±100	nA
Q_g	Total Gate Charge	I_D=62A	-	97	155	nC
Q_{gs}	Gate-Source Charge	V_{DS}=44V	-	27	-	nC
Q_{gd}	Gate-Drain ("Miller") Charge	V_{GS}=10V	-	46	-	nC
$t_{d(on)}$	Turn-on Delay Time	V_{DS}=28V	-	20	-	ns
t_r	Rise Time	I_D=62A	-	125	-	ns
$t_{d(off)}$	Turn-off Delay Time	R_G=1.5Ω	-	35	-	ns
t_f	Fall Time	V_{GS}=10V	-	14	-	ns
C_{iss}	Input Capacitance	V_{GS}=0V	-	3900	6240	pF
C_{oss}	Output Capacitance	V_{DS}=25V	-	600	-	pF
C_{rss}	Reverse Transfer Capacitance	f=1.0MHz	-	365	-	pF
R_g	Gate Resistance	f=1.0MHz	-	1	2	Ω

Source-Drain Diode

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Units
V_{SD}	Forward On Voltage[2]	I_S=62A, V_{GS}=0V	-	-	1.3	V
t_{rr}	Reverse Recovery Time	I_S=62A, V_{GS}=0V,	-	50	-	ns
Q_{rr}	Reverse Recovery Charge	dI/dt=100A/μs	-	80	-	nC

Notes:

1.Pulse width limited by Max. junction temperature.

2.Pulse test

3.Starting T_j=25°C , V_{DD}=30V , L=0.14mH , R_G=25Ω

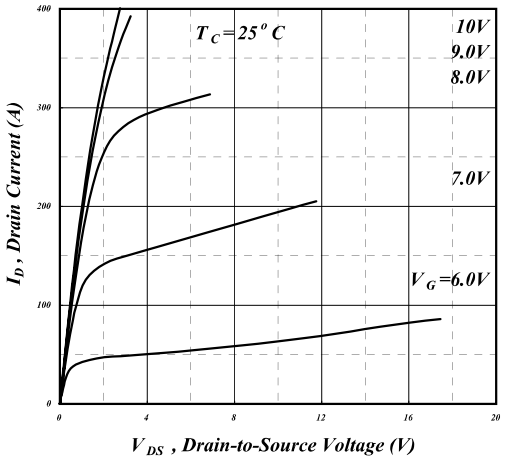


Fig 1. Typical Output Characteristics

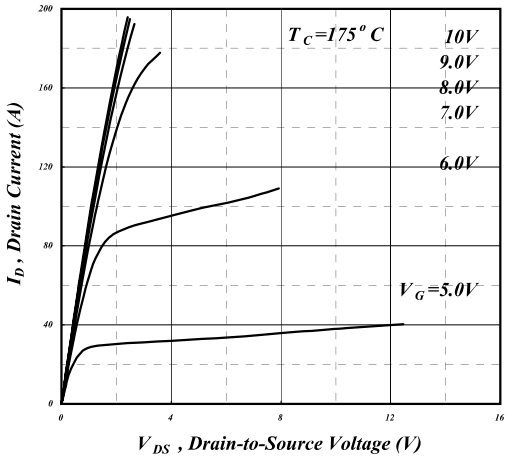


Fig 2. Typical Output Characteristics

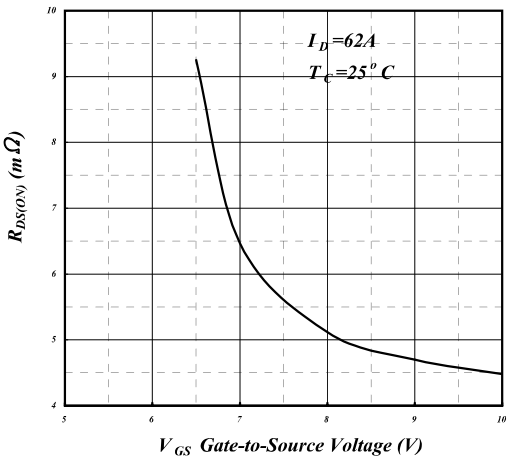


Fig 3. On-Resistance v.s. Gate Voltage

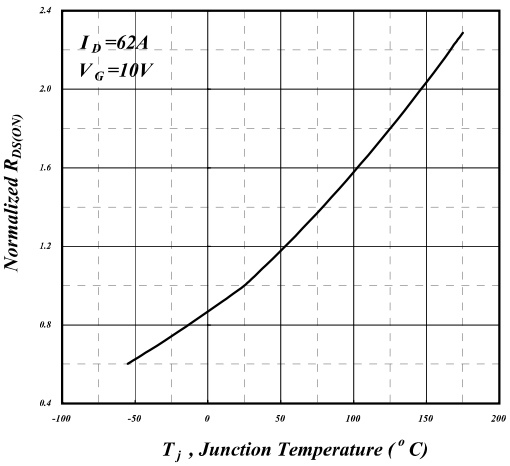


Fig 4. Normalized On-Resistance v.s. Junction Temperature

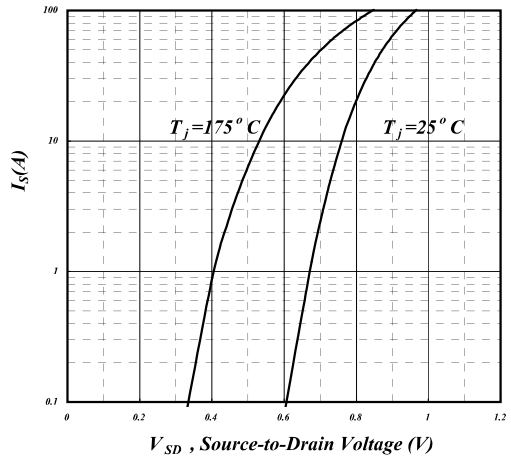


Fig 5. Forward Characteristic of Reverse Diode

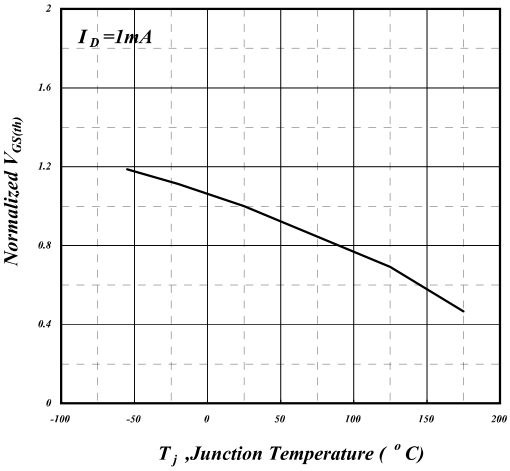


Fig 6. Gate Threshold Voltage v.s. Junction Temperature

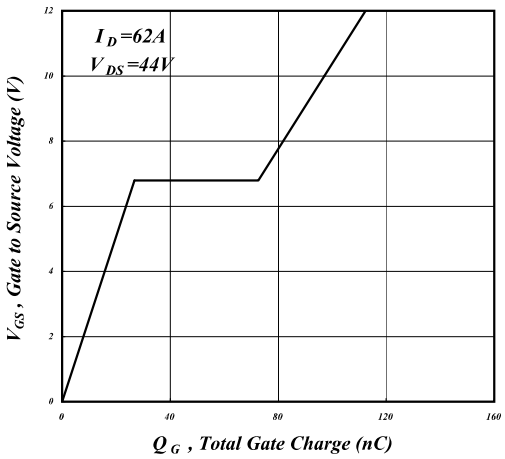


Fig 7. Gate Charge Characteristics

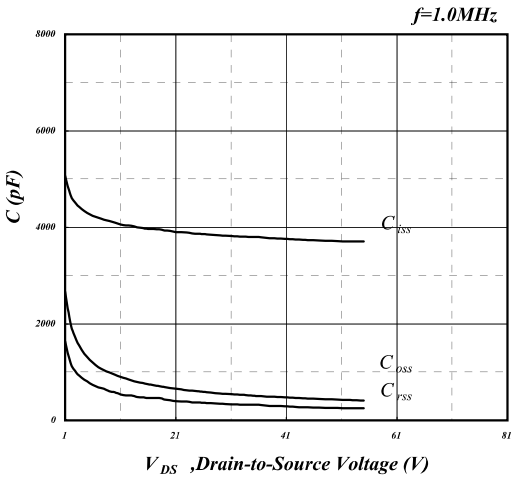


Fig 8. Typical Capacitance Characteristics

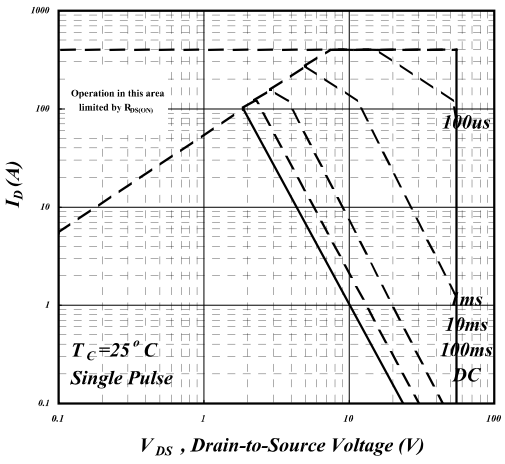


Fig 9. Maximum Safe Operating Area

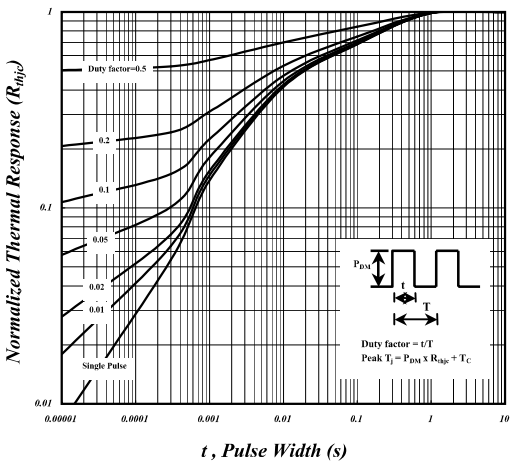


Fig 10. Effective Transient Thermal Impedance

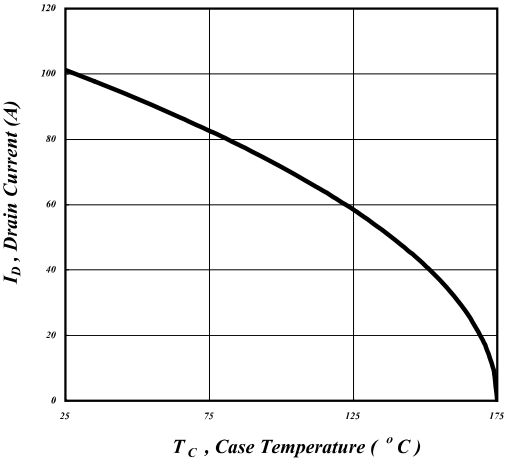


Fig 11. Drain Current v.s. Case Temperature

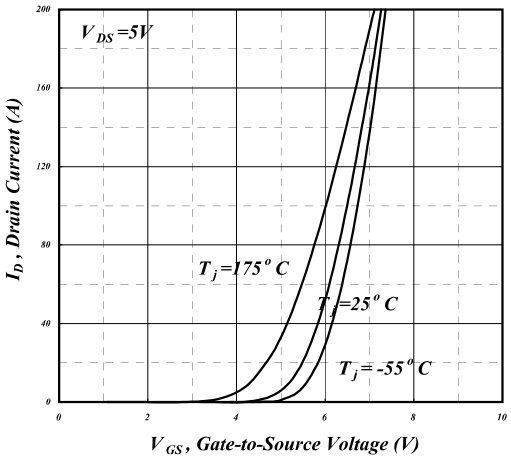


Fig 12. Transfer Characteristics

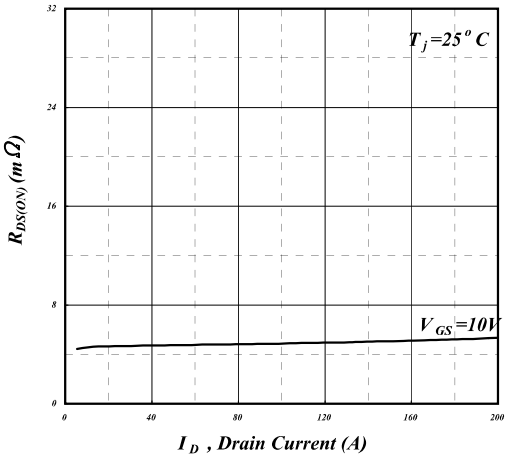


Fig 13. Typ. Drain-Source on State Resistance

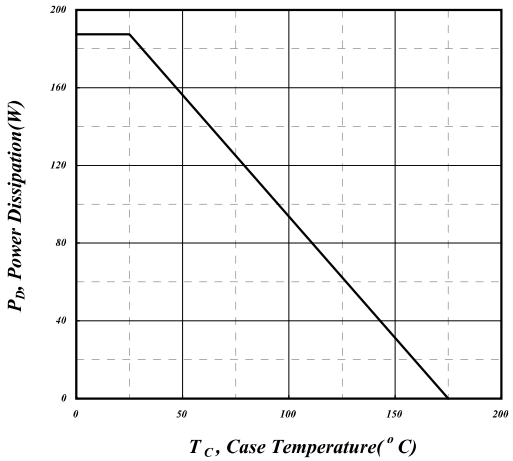


Fig 14. Total Power Dissipation

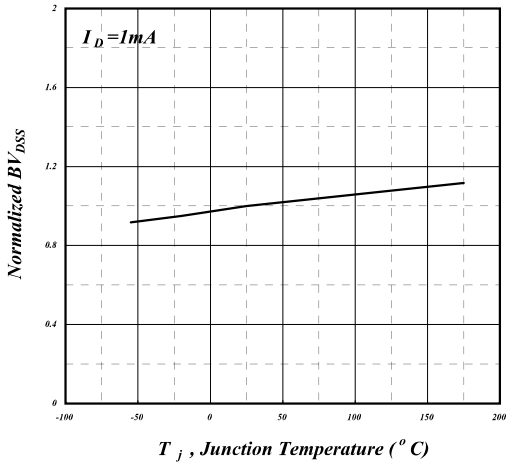


Fig 15. Normalized BV_{DSS} v.s. Junction

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for MOSFET ***category:***

Click to view products by Quan Li ***manufacturer:***

Other Similar products are found below :

IRFD120 JANTX2N5237 BUK455-60A/B MIC4420CM-TR VN1206L NDP4060 SI4482DY IPS70R2K0CEAKMA1 SQD23N06-31L-GE3 TK16J60W,S1VQ(O 2SK2614(TE16L1,Q) DMN1017UCP3-7 DMN1053UCP4-7 SQJ469EP-T1-GE3 NTE2384 DMC2700UDMQ-7 DMN2080UCB4-7 DMN61D9UWQ-13 US6M2GTR DMN31D5UDJ-7 DMP22D4UFO-7B DMN1006UCA6-7 DMN16M9UCA6-7 STF5N65M6 IRF40H233XTMA1 STU5N65M6 DMN6022SSD-13 DMN13M9UCA6-7 DMTH10H4M6SPS-13 DMN2990UFB-7B IPB80P04P405ATMA2 2N7002W-G MCAC30N06Y-TP MCQ7328-TP NTMC083NP10M5L BXP7N65D BXP4N65F AOL1454G WMJ80N60C4 BXP2N20L BXP2N65D BXT1150N10J BXT1700P06M TSM60NB380CP ROG RQ7L055BGTCR DMNH15H110SK3-13 SLF10N65ABV2 BSO203SP BSO211P IPA60R230P6