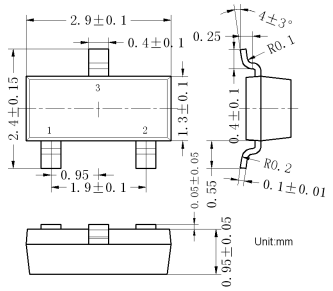
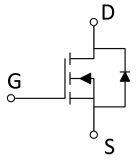
SOT-23 Plastic-Encapsulate Mosfets

AO3400 N-Channel Mosfet



1. Gate
2. Source
3. Drain



Features

- V_{DS} 30V
- I_D (at V_{GS}=10V 5.7A
- $R_{DS(ON)}$ (at V_{GS}=10V < 26.5mΩ
- $R_{DS(ON)}$ (at V_{GS} = 4.5V < 32mΩ
- $R_{DS(ON)}$ (at V_{GS} = 2.5V < 48mΩ

Absolute Maximum Ratings T_A=25℃ unless otherwise noted

Symbol	Parameter		Maximum	Units
V_{DS}	Drain-Source Voltage		30	V
V_{GS}	Gate-Source Voltage		±12	V
I_D	Continuous Drain Current	T_A=25℃	5.7	A
		T_A=70℃	4.7	
I_{DM}	Pulsed Drain Current [C]		30	
P_D	Power Dissipation [B]	T_A=25℃	1.4	W
		T_A=70℃	0.9	
T_J, T_{STG}	Junction and Storage Temperature Range		55 to 150	°C

Thermal Characteristics					
Symbol	Parameter		Typ	Max	Units
$R_{\theta JA}$	Maximum Junction-to-Ambient [A]	t ≤ 10s	70	90	℃/W
	Maximum Junction-to-Ambient [A D]	Steady-State	100	125	℃/W
$R_{\theta JL}$	Maximum Junction-to-Lead	Steady-State	63	80	℃/W

Electrical Characteristics (T_a=25°C unless otherwise specified)

Symbol	Parameter	Conditions	Min	Typ	Max	Units
STATIC PARAMETERS						
BV_{DSS}	Drain-Source Breakdown Voltage	I_D=250μA, V_{GS}=0V	30			V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS}=30V, V_{GS}=0V			1	μA
		T_J=55℃			5	
I_{GSS}	Gate-Body leakage current	V_{DS}=0V, V_{GS}= ±12V			100	nA
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}=V_{GS} I_D=250μA	0.65	1.05	1.45	V
$I_{D(ON)}$	On state drain current	V_{GS}=4.5V, V_{DS}=5V	30			A
$R_{DS(ON)}$	Static Drain-Source On-Resistance	V_{GS}=10V, I_D=5.7A		18	26.5	mΩ
		T_J=125℃		28	38	
		V_{GS}=4.5V, I_D=5A		19	32	mΩ
		V_{GS}=2.5V, I_D=3A		24	48	mΩ
g_{FS}	Forward Transconductance	V_{DS}=5V, I_D=5.7A		33		S
V_{SD}	Diode Forward Voltage	I_S=1A,V_{GS}=0V		0.7	1	V
I_S	Maximum Body-Diode Continuous Current				2	A
DYNAMIC PARAMETERS						
C_{iss}	Input Capacitance	V_{GS}=0V, V_{DS}=15V, f=1MHz		630		pF
C_{oss}	Output Capacitance			75		pF
C_{rss}	Reverse Transfer Capacitance			50		pF
R_g	Gate resistance	V_{GS}=0V, V_{DS}=0V, f=1MHz	1.5	3	4.5	Ω
SWITCHING PARAMETERS						
Q_g	Total Gate Charge	V_{GS}=4.5V, V_{DS}=15V, I_D=5.7A		6	7	nC
Q_{gs}	Gate Source Charge			1.3		nC
Q_{gd}	Gate Drain Charge			1.8		nC
$t_{D(on)}$	Turn-On DelayTime	V_{GS}=10V, V_{DS}=15V, R_L=2.6Ω, R_{GEN}=3Ω		3		ns
t_r	Turn-On Rise Time			2.5		ns
$t_{D(off)}$	Turn-Off DelayTime			25		ns
t_f	Turn-Off Fall Time			4		ns
t_{rr}	Body Diode Reverse Recovery Time	I_F=5.7A, dI/dt=100A/μs		8.5		ns
Q_{rr}	Body Diode Reverse Recovery Charge	I_F=5.7A, dI/dt=100A/μs		2.6		nC

A. The value of $R_{\theta JA}$ 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 value in any given application depends on the user's specific board design.

B. The power dissipation P_D is based on $T_{J(MAX)}$=150° C, using ≤ 10s junction-to-ambient thermal resistance.

C. Repetitive rating, pulse width limited by junction temperature $T_{J(MAX)}$=150° C. Ratings are based on low frequency and duty cycles to keep initialT_J=25° C.

D. The $R_{\theta JA}$ is the sum of the thermal impedence from junction to lead $R_{\theta JL}$ and lead to ambient.

E. The static characteristics in Figures 1 to 6 are obtained using <300μs pulses, duty cycle 0.5% max.

F. These curves are based on the junction-to-ambient thermal impedence which is measured with the device mounted on 1in² FR-4 board with 2oz. Copper, assuming a maximum junction temperature of $T_{J(MAX)}$=150° C. The SOA curve provides a single pulse rating.

Typical Characteristics

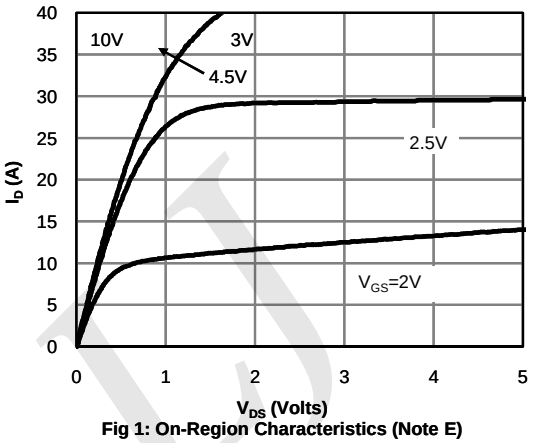


Fig 1: On-Region Characteristics (Note E)

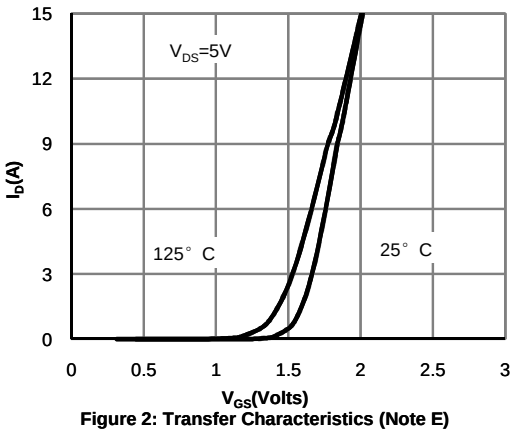


Figure 2: Transfer Characteristics (Note E)

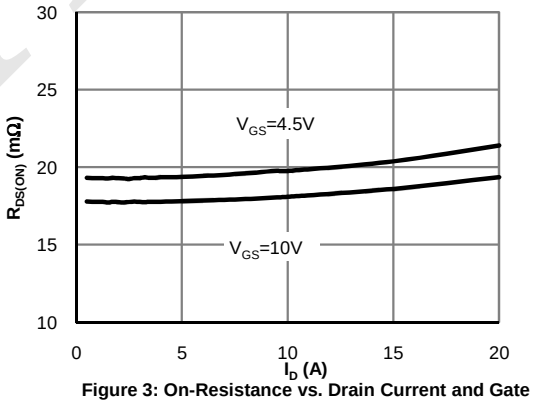


Figure 3: On-Resistance vs. Drain Current and Gate Voltage (Note E)

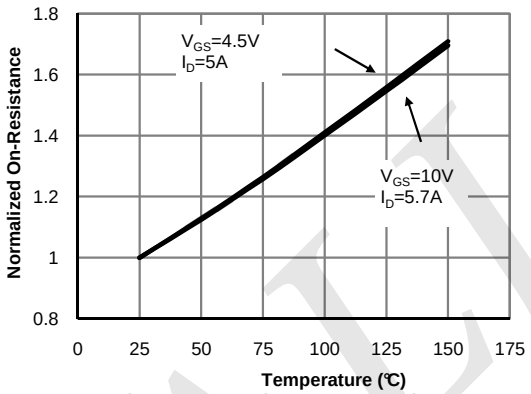


Figure 4: On-Resistance vs. Junction Temperature (Note E)

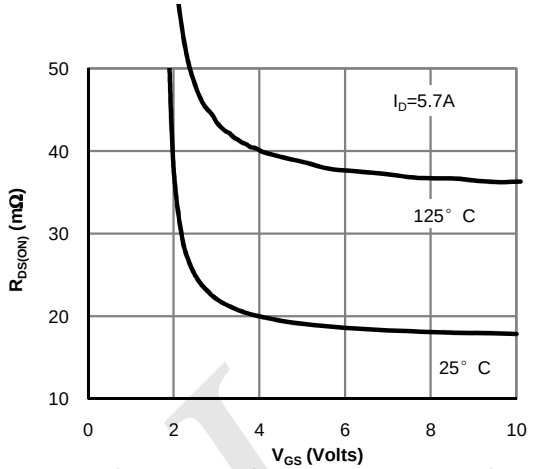


Figure 5: On-Resistance vs. Gate-Source Voltage (Note E)

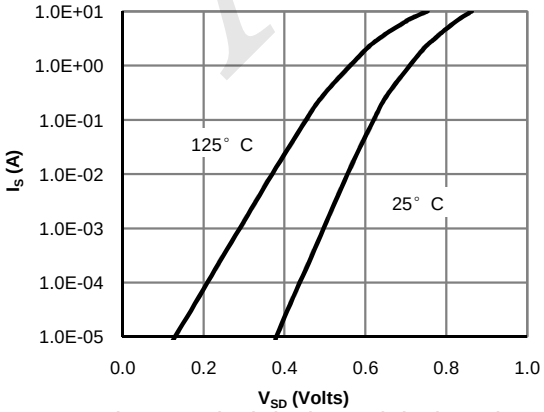


Figure 6: Body-Diode Characteristics (Note E)

Typical Characteristics

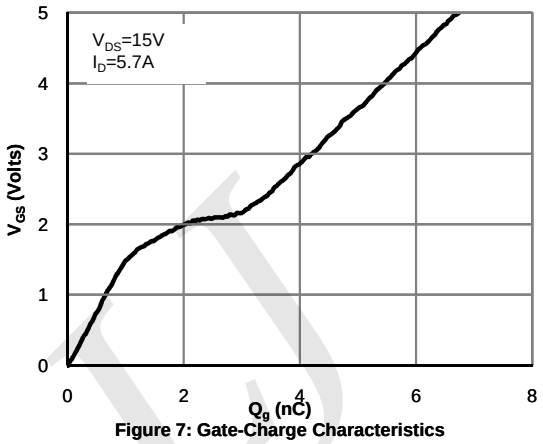


Figure 7: Gate-Charge Characteristics

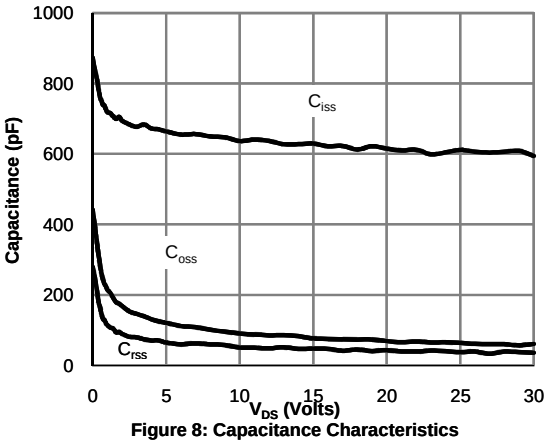


Figure 8: Capacitance Characteristics

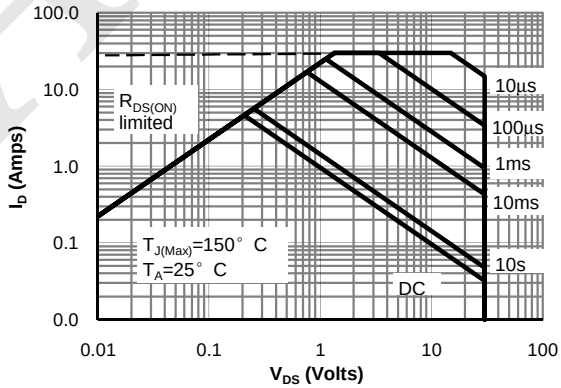


Figure 9: Maximum Forward Biased Safe Operating Area (Note F)

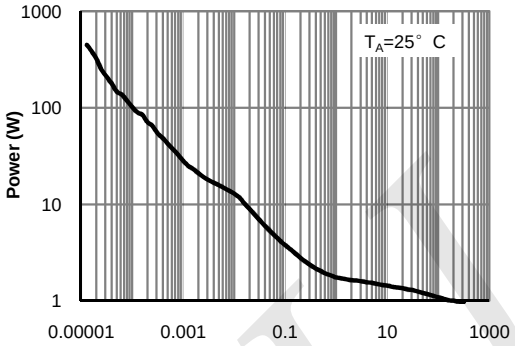


Figure 10: Single Pulse Power Rating Junction-to-Ambient (Note F)

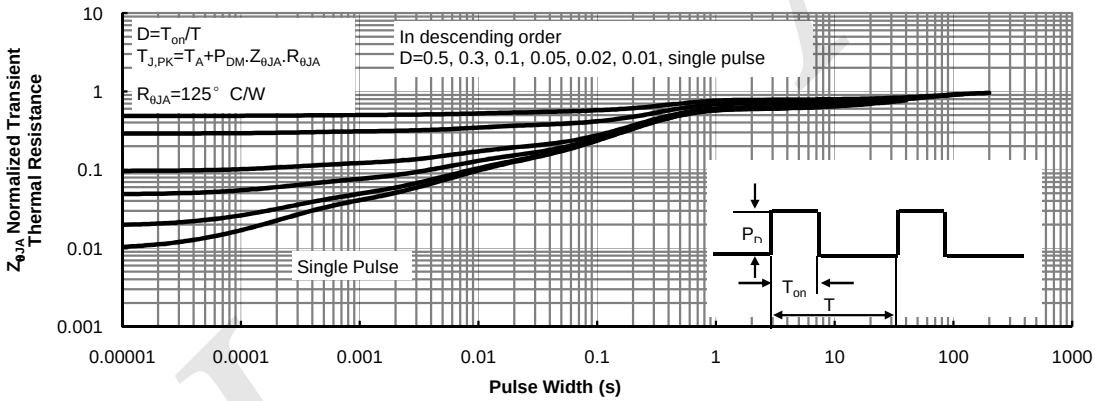
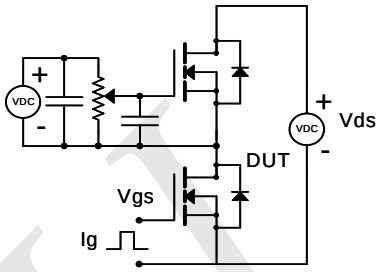
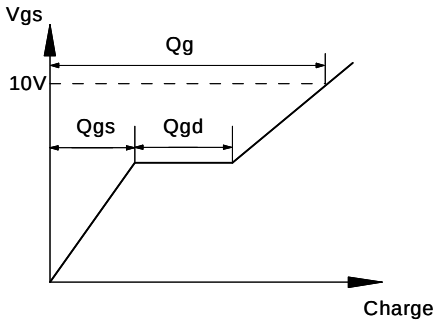
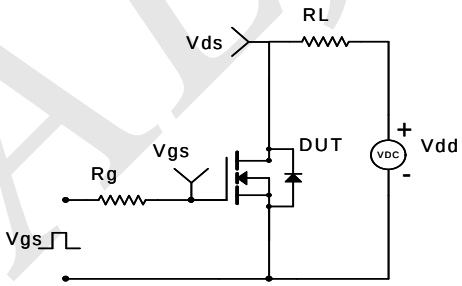


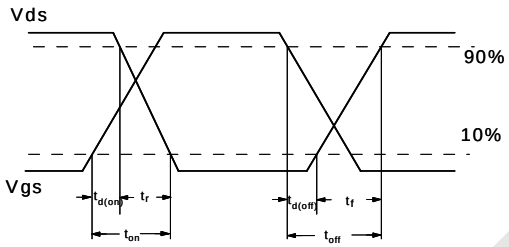
Figure 11: Normalized Maximum Transient Thermal Impedance (Note F)



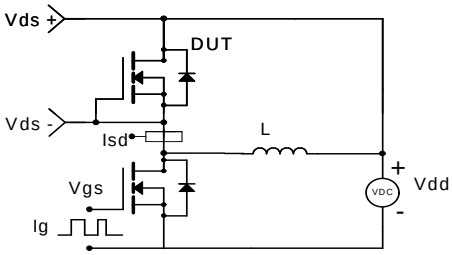


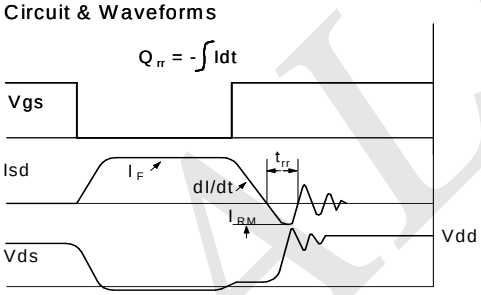
Resistive Switching Test Circuit & Waveforms





Diode Recovery Test Circuit & Waveforms





X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for Bipolar Transistors - BJT ***category:***

Click to view products by ALJ ***manufacturer:***

Other Similar products are found below :

BC559C MCH4017-TL-H MMBT-2369-TR BC546/116 NJVMJD148T4G NTE16 NTE195A IMX9T110 2N4401-A 2N6728 2SA1419T-TD-H 2SB1204S-TL-E 2SC5488A-TL-H FMC5AT148 2N2369ADCSM 2N2907A 2N3904-NS 2N5769 2SC4618TLN CPH6501-TL-E BC856BW-13-F US6T6TR BAX18/A52R BC556/112 IMZ2AT108 MMST8098T146 MCH6102-TL-E BC846B-13-F 2N3879 30A02MH-TL-E NTE13 NTE282 NTE323 NTE350 NTE81 JANTX2N2920L JANSR2N2907AUB CMLT3946EG TR SNSS40600CF8T1G CMLT3906EG TR GRP-DATA-JANS2N2907AUB GRP-DATA-JANS2N2222AUA MMDT3946FL3-7 2N4240 JANS2N3019 MSB30KH-13 2N2221AUB 2SD1815T-TL-E 2N6678 2N2907Ae4