ABSOLUTE MAXIMUM RATINGS (T_C = 25°C unless otherwise noted

Parameter		JANTXV, JANTX, 2N6796	Units
I_D @ V_{GS} = 10V, T_C = 25°C	Continuous Drain Current	8.0	A
I_D @ V_{GS} = 10V, T_C = 100°C	Continuous Drain Current	5.0	A
I_{DM}	Pulsed Drain Current[1]	32	A
P_D @ T_C = 25°C	Maximum Power Dissipation	25	W
	Linear Derating Factor	0.2	W/°C
V_{GS}	Gate-Source Voltage	± 20	V
E_{AS}	Single Pulse Avalanche Energy [2]	4.3 [4]	mJ
T_J T_{STG}	Operating Junction Storage Temperature Range	-55 to 150	°C
	Lead Temperature	300(.06 from case for 10 sec)	°C

ELECTRICAL CHARACTERISTICS @ T_J = 25°C (Unless Otherwise Specified)

Parameter		Min.	Typ.	Max.	Units	Test Conditions
BV_{DSS}	Drain-Source Breakdown Voltage	100			V	V_{GS} = 0V, I_D = 1.0 mA,
$R_{DS(on)}$	Static Drain-to-Source On-State Resistance	–	–	.18		V_{GS} = 10 V, I_D = 5.0 A [3]
		–	–	.195		V_{GS} = 10 V, I_D = 8.0 A [3]
$V_{GS(th)}$	Gate Threshold Voltage	2.0	–	4.0	V	V_{DS} = V_{GS}, I_D = 250 µA
I_{DSS}	Zero Gate Voltage Drain Current	–	–	25	µA	V_{DS} = 80 V, V_{GS} = 0V
		–	–	250		V_{DS} = 80 V, V_{GS} = 0V, T_J = 125 °C
I_{GSS}	Gate -to-Source Leakage Forward	–	–	100	nA	V_{GS} = 20 V
I_{GSS}	Gate -to-Source Leakage Reverse	–	–	-100	nA	V_{GS} = -20 V
$Q_{G(on)}$	On-state Gate Charge	–	–	28.5	nC	V_{GS} = 10 V, I_D = 8A
Q_{GS}	Gate-to-Source Charge	–	–	6.3	nC	V_{DS} = 50 V
Q_{Gd}	Gate-to-Drain ("Miller") Charge	–	–	16.6	nC	See note 4
$t_{d(on)}$	Turn-On Delay Time	–	–	30	ns	V_{DD} = 30 V, I_D = 5.0 A, R_G = 7.5
t_r	Rise Time	–	–	75	ns	See note 4
$t_{d(off)}$	Turn-Off Delay Time	–	–	40	ns	
t_f	Fall Time	–	–	45	ns	

Source-Drain Diode Ratings and Characteristics

Parameter		Min.	Typ.	Max.	Units	Test Conditions
V_{SD}	Diode Forward Voltage	–	–	1.5	V	T_J = 25°C, I_S = 8.0A [3], V_{GS} = 0 V [3]
t_{rr}	Reverse Recovery Time	–	–	300	ns	T_J = 25°C, I_F = 8.0 A, di/dt ≤ 100 A/µs

[3]

Thermal Resistance

Parameter		Min.	Typ.	Max.	Units	Test Conditions
R_{thJC}	Junction-to-Case	–	–	5.0	°C/W	Mounting surface flat, smooth, and greased
R_{thCS}	Case-to-sink	–	0.21	–		
R_{thJA}	Junction-to-Ambient	–	–	175		Typical socket mount

1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. @V_{DD} = 25 V, Starting T_J = 25 °C, L = 100 µH ± 10%, R_G = 25 , Peak I_L = 8.0 A
3. Pulse width ≤ 300 µs; Duty Cycle ≤ 2 %
4. See MIL-S-19500/557

Omnirel 205 Crawford Street, Leominster, MA 01453 USA (508) 534-5776 FAX (508) 537-4246

ABSOLUTE MAXIMUM RATINGS (T_C = 25°C unless otherwise noted

Parameter		JANTXV, JANTX, 2N6798	Units
I_D @ V_{GS} = 10V, T_C = 25°C	Continuous Drain Current	5.5	A
I_D @ V_{GS} = 10V, T_C = 100°C	Continuous Drain Current	3.5	A
I_{DM}	Pulsed Drain Current [1]	22	A
P_D @ T_C = 25°C	Maximum Power Dissipation	25	W
	Linear Derating Factor	0.2	W/°C
V_{GS}	Gate-Source Voltage	± 20	V
E_{AS}	Single Pulse Avalanche Energy [2]	2.0 [4]	mJ
T_J T_{STG}	Operating Junction Storage Temperature Range	-55 to 150	°C
	Lead Temperature	300(.06 from case for 10 sec)	°C

ELECTRICAL CHARACTERISTICS @ T_J = 25°C (Unless Otherwise Specified)

Parameter		Min.	Typ.	Max.	Units	Test Conditions
BV_{DSS}	Drain-Source Breakdown Voltage	200			V	V_{GS} = 0V, I_D = 1.0 mA,
$R_{DS(on)}$	Static Drain-to-Source On-State Resistance	–	–	.40		V_{GS} = 10 V, I_D = 3.5 A [3]
		–	–	.42		V_{GS} = 10 V, I_D = 5.5 A [3]
$V_{GS(th)}$	Gate Threshold Voltage	2.0	–	4.0	V	V_{DS} = V_{GS}, I_D = 250 µA
I_{DSS}	Zero Gate Voltage Drain Current	–	–	25	µA	V_{DS} = 160 V, V_{GS} = 0V
		–	–	250		V_{DS} = 160 V, V_{GS} = 0V, T_J = 125°C
I_{GSS}	Gate -to-Source Leakage Forward	–	–	100	nA	V_{GS} = 20 V
I_{GSS}	Gate -to-Source Leakage Reverse	–	–	-100	nA	V_{GS} = -20 V
$Q_{G(on)}$	On-state Gate Charge	–	–	42.1	nC	V_{GS} = 10 V, I_D = 5.5 A
Q_{GS}	Gate-to-Source Charge	–	–	5.3	nC	V_{DS} = 100 V
Q_{Gd}	Gate-to-Drain ("Miller") Charge	–	–	28.1	nC	See note 4
$t_{d(on)}$	Turn-On Delay Time	–	–	30	ns	V_{DD} = 77 V, I_D = 3.5 A, R_G = 7.5
t_r	Rise Time	–	–	50	ns	See note 4
$t_{d(off)}$	Turn-Off Delay Time	–	–	50	ns	
t_f	Fall Time	–	–	40	ns	

Source-Drain Diode Ratings and Characteristics

Parameter		Min.	Typ.	Max.	Units	Test Conditions
V_{SD}	Diode Forward Voltage	–	–	1.4	V	T_J = 25°C, I_S = 5.5 A [3], V_{GS} = 0 V [3]
t_{rr}	Reverse Recovery Time	–	–	500	ns	T_J = 25°C, I_F = 5.5 A, di/dt ≤ 100 A/µs

[3]

Thermal Resistance

Parameter		Min.	Typ.	Max.	Units	Test Conditions
R_{thJC}	Junction-to-Case	–	–	5.0	°C/W	Mounting surface flat, smooth, and greased
R_{thCS}	Case-to-sink	–	0.21	–		
R_{thJA}	Junction-to-Ambient	–	–	175		Typical socket mount

1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. @V_{DD} = 50 V, Starting T_J = 25°C, L = 100 µH ± 10%, R_G = 25 , Peak I_L = 5.5 A
3. Pulse width ≤ 300 µs; Duty Cycle ≤ 2 %
4. See MIL-S-19500/557

ABSOLUTE MAXIMUM RATINGS (T_C = 25°C unless otherwise noted

Parameter		JANTXV, JANTX, 2N6800	Units
I_D @ V_{GS} = 10V, T_C = 25°C	Continuous Drain Current	3.0	A
I_D @ V_{GS} = 10V, T_C = 100°C	Continuous Drain Current	2.0	A
I_{DM}	Pulsed Drain Current[1]	14	A
P_D @ T_C = 25°C	Maximum Power Dissipation	25	W
	Linear Derating Factor	0.2	W/°C
V_{GS}	Gate-Source Voltage	± 20	V
E_{AS}	Single Pulse Avalanche Energy [2]	0.51 [4]	mJ
T_J T_{STG}	Operating Junction Storage Temperature Range	-55 to 150	°C
	Lead Temperature	300(.06 from case for 10 sec)	°C

ELECTRICAL CHARACTERISTICS @ T_J = 25°C (Unless Otherwise Specified)

Parameter		Min.	Typ.	Max.	Units	Test Conditions
BV_{DSS}	Drain-Source Breakdown Voltage	400			V	V_{GS} = 0V, I_D = 1.0 mA,
$R_{DS(on)}$	Static Drain-to-Source On-State Resistance	–	–	1.0		V_{GS} = 10 V, I_D = 2.0 A [3]
		–	–	1.10		V_{GS} = 10 V, I_D = 3.0 A [3]
$V_{GS(th)}$	Gate Threshold Voltage	2.0	–	4.0	V	V_{DS} = V_{GS}, I_D = 250 µA
I_{DSS}	Zero Gate Voltage Drain Current	–	–	25	µA	V_{DS} = 320 V, V_{GS} = 0V
		–	–	250		V_{DS} = 320 V, V_{GS} = 0V, T_J = 125°C
I_{GSS}	Gate -to-Source Leakage Forward	–	–	100	nA	V_{GS} = 20 V
I_{GSS}	Gate -to-Source Leakage Reverse	–	–	-100	nA	V_{GS} = -20 V
$Q_{g(on)}$	On-state Gate Charge	–	–	33	nC	V_{GS} = 10 V, I_D = 3.0A
Q_{GS}	Gate-to-Source Charge	–	–	5.8	nC	V_{DS} = 200 V
Q_{Gd}	Gate-to-Drain ("Miller") Charge	–	–	16.6	nC	See note 4
$t_{d(on)}$	Turn-On Delay Time	–	–	30	ns	V_{DD} = 176 V, I_D = 2 A, R_G = 7.5
t_r	Rise Time	–	–	35	ns	See note 4
$t_{d(off)}$	Turn-Off Delay Time	–	–	55	ns	
t_f	Fall Time	–	–	35	ns	

Source-Drain Diode Ratings and Characteristics

Parameter		Min.	Typ.	Max.	Units	Test Conditions
V_{SD}	Diode Forward Voltage	–	–	1.4	V	T_J = 25°C, I_S = 3 A [3], V_{GS} = 0 V
t_{rr}	Reverse Recovery Time	–	–	700	ns	T_J = 25°C, I_F = 3.0 A, di/dt ≤ 100A/µs [3]

Thermal Resistance

Parameter		Min.	Typ.	Max.	Units	Test Conditions
R_{thJC}	Junction-to-Case	–	–	5.0	°C/W	Mounting surface flat, smooth, and greased
R_{thCS}	Case-to-sink	–	0.21	–		
R_{thJA}	Junction-to-Ambient	–	–	175		Typical socket mount

1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. @V_{DD} = 50 V, Starting T_J = 25°C, L = 100 µH ± 10%, R_G = 25 , Peak I_L = 3.0 A
3. Pulse width ≤ 300 µs; Duty Cycle ≤ 2 %
4. See MIL-S-19500/557

ABSOLUTE MAXIMUM RATINGS (T_C = 25°C unless otherwise noted

Parameter		JANTXV, JANTX, 2N6802	Units
I_D @ V_{GS} = 10V, T_C = 25°C	Continuous Drain Current	2.5	A
I_D @ V_{GS} = 10V, T_C = 100°C	Continuous Drain Current	1.5	A
I_{DM}	Pulsed Drain Current[1]	11	A
P_D @ T_C = 25°C	Maximum Power Dissipation	25	W
	Linear Derating Factor	0.20	W/°C
V_{GS}	Gate-Source Voltage	± 20	V
E_{AS}	Single Pulse Avalanche Energy [2]	.35 [4]	mJ
T_J T_{STG}	Operating Junction Storage Temperature Range	-55 to 150	°C
	Lead Temperature	300 (.06 from case for 10 sec)	°C

ELECTRICAL CHARACTERISTICS @ T_J = 25°C (Unless Otherwise Specified)

Parameter		Min.	Typ.	Max.	Units	Test Conditions
BV_{DSS}	Drain-Source Breakdown Voltage	500			V	V_{GS} = 0V, I_D = 1.0 mA,
$R_{DS(on)}$	Static Drain-to-Source On-State Resistance	–	–	1.5		V_{GS} = 10 V, I_D = 1.5 A [3]
		–	–	1.6		V_{GS} = 10 V, I_D = 2.5 A [3]
$V_{GS(th)}$	Gate Threshold Voltage	2.0	–	4.0	V	V_{DS} = V_{GS}, I_D = 250 µA
I_{DSS}	Zero Gate Voltage Drain Current	–	–	25	µA	V_{DS} = 400 V, V_{GS} = 0V
		–	–	250		V_{DS} = 400 V, V_{GS} = 0V, T_J = 125°C
I_{GSS}	Gate -to-Source Leakage Forward	–	–	100	nA	V_{GS} = 20 V
I_{GSS}	Gate -to-Source Leakage Reverse	–	–	-100	nA	V_{GS} = -20 V
$Q_{G(on)}$	On-state Gate Charge	–	–	29.5	nC	V_{GS} = 10 V, I_D = 2.5 A
Q_{GS}	Gate-to-Source Charge	–	–	4.5	nC	V_{DS} = 250 V
Q_{Gd}	Gate-to-Drain ("Miller") Charge	–	–	28.1	nC	See note 4
$t_{d(on)}$	Turn-On Delay Time	–	–	30	ns	V_{DD} = 225 V, I_D = 1.5 A, R_G = 7.5
t_r	Rise Time	–	–	30	ns	See note 4
$t_{d(off)}$	Turn-Off Delay Time	–	–	55	ns	
t_f	Fall Time	–	–	30	ns	

Source-Drain Diode Ratings and Characteristics

Parameter		Min.	Typ.	Max.	Units	Test Conditions
V_{SD}	Diode Forward Voltage	–	–	1.4	V	T_J = 25°C, I_S = 2.5 A [3], V_{GS} = 0 V
t_{rr}	Reverse Recovery Time	–	–	900	ns	T_J = 25°C, I_F = 2.5 A, di/dt ≤ 100A/µs [3]

Thermal Resistance

Parameter		Min.	Typ.	Max.	Units	Test Conditions
R_{thJC}	Junction-to-Case	–	–	5.0	°C/W	Mounting surface flat, smooth, and greased
R_{thCS}	Case-to-sink	–	0.21	–		
R_{thJA}	Junction-to-Ambient	–	–	175		Typical socket mount

1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. @V_{DD} = 50 V, Starting T_J = 25°C, L = 100 uH ± 10%, R_G = 25 , Peak I_L = 2.5 A
3. Pulse width ≤ 300 µs; Duty Cycle ≤ 2 %
4. See MIL-S-19500/557