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

Parameter		JANTXV, JANTX, 2N6764	Units
I_D @ V_{GS} = 10V, T_C = 25°C	Continuous Drain Current	38	A
I_D @ V_{GS} = 10V, T_C = 100°C	Continuous Drain Current	24	A
I_{DM}	Pulsed Drain Current[1]	152	A
P_D @ T_C = 25°C	Maximum Power Dissipation	150	W
	Linear Derating Factor	1.2	W/°C
V_{GS}	Gate-Source Voltage	± 20	V
E_{AS}	Single Pulse Avalanche Energy [2]	150 [4]	mJ
I_{AR}	Avalanche Current[1]	38 [4]	A
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	–	–	0.055		V_{GS} = 10 V, I_D = 24 A [3]
		–	–	0.065		V_{GS} = 10 V, I_D = 38 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	50	–	125	nC	V_{GS} = 10 V, I_D = 38A
Q_{GS}	Gate-to-Source Charge	8	–	22	nC	V_{DS} = 50 V
Q_{Gd}	Gate-to-Drain ("Miller") Charge	25	–	65	nC	See note 4
$t_{d(on)}$	Turn-On Delay Time	–	–	35	ns	V_{DD} = 50 V, I_D = 38A, R_G = 2.35
t_r	Rise Time	–	–	190	ns	See note 4
$t_{d(off)}$	Turn-Off Delay Time	–	–	170	ns	
t_f	Fall Time	–	–	130	ns	

Source-Drain Diode Ratings and Characteristics

Parameter		Min.	Typ.	Max.	Units	Test Conditions
V_{SD}	Diode Forward Voltage	–	–	1.9	V	T_J = 25°C, I_S = 38A [3], V_{GS} = 0 V
t_{rr}	Reverse Recovery Time	–	–	500	ns	T_J = 25°C, I_F = 38A, di/dt ≤ 100A/µs [3]

Thermal Resistance

Parameter		Min.	Typ.	Max.	Units	Test Conditions
R_{thJC}	Junction-to-Case	–	–	0.83	°C/W	Mounting surface flat, smooth, and greased
R_{thCS}	Case-to-sink	–	0.21	–		
R_{thJA}	Junction-to-Ambient	–	–	48		Typical socket mount

1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. @V_{DD} = 50V, Starting T_J = 25°C, L = 100 µH ± 10%, R_G = 25 , Peak I_L = 38A
3. Pulse width ≤ 300 µs; Duty Cycle ≤ 2 %
4. See MIL-S-19500/543

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

Parameter		JANTXV, JANTX, 2N6766	Units
I_D @ V_{GS} = 10V, T_C = 25°C	Continuous Drain Current	30	A
I_D @ V_{GS} = 10V, T_C = 100°C	Continuous Drain Current	19	A
I_{DM}	Pulsed Drain Current[1]	120	A
P_D @ T_C = 25°C	Maximum Power Dissipation	150	W
	Linear Derating Factor	1.2	W/°C
V_{GS}	Gate-Source Voltage	± 20	V
E_{AS}	Single Pulse Avalanche Energy [2]	60 [4]	mJ
I_{AR}	Avalanche Current[1]	30 [4]	A
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	–	–	.085		V_{GS} = 10 V, I_D = 19 A [3]
		–	–	.090		V_{GS} = 10 V, I_D = 30 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	55	–	115	nC	V_{GS} = 10 V, I_D = 30A
Q_{GS}	Gate-to-Source Charge	8	–	22	nC	V_{DS} = 100V
Q_{Gd}	Gate-to-Drain ("Miller") Charge	30	–	60	nC	See note 4
$t_{d(on)}$	Turn-On Delay Time	–	–	35	ns	V_{DD} = 100 V, I_D = 30A, R_G = 2.35
t_r	Rise Time	–	–	190	ns	See note 4
$t_{d(off)}$	Turn-Off Delay Time	–	–	170	ns	
t_f	Fall Time	–	–	130	ns	

Source-Drain Diode Ratings and Characteristics

Parameter		Min.	Typ.	Max.	Units	Test Conditions
V_{SD}	Diode Forward Voltage	–	–	1.9	V	T_J = 25°C, I_S = 30 A [3], V_{GS} = 0 V
t_{rr}	Reverse Recovery Time	–	–	950	ns	T_J = 25°C, I_F = 30 A, di/dt≤100A/µs [3]

Thermal Resistance

Parameter		Min.	Typ.	Max.	Units	Test Conditions
R_{thJC}	Junction-to-Case	–	–	0.83	°C/W	Mounting surface flat, smooth, and greased
R_{thCS}	Case-to-sink	–	0.21	–		
R_{thJA}	Junction-to-Ambient	–	–	48		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 = 30 A
3. Pulse width ≤ 300 µs; Duty Cycle ≤ 2 %
4. See MIL-S-19500/543

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

Parameter		JANTXV, JANTX, 2N6768	Units
I_D @ V_{GS} = 10V, T_C = 25°C	Continuous Drain Current	14	A
I_D @ V_{GS} = 10V, T_C = 100°C	Continuous Drain Current	9.0	A
I_{DM}	Pulsed Drain Current[1]	56	A
P_D @ T_C = 25°C	Maximum Power Dissipation	150	W
	Linear Derating Factor	1.2	W/°C
V_{GS}	Gate-Source Voltage	± 20	V
E_{AS}	Single Pulse Avalanche Energy [2]	11.3 [4]	mJ
I_{AR}	Avalanche Current[1]	14 [4]	A
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	–	–	.300		V_{GS} = 10 V, I_D = 9.0 A [3]
		–	–	.400		V_{GS} = 10 V, I_D = 14 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	52	–	110	nC	V_{GS} = 10 V, I_D = 14A
Q_{GS}	Gate-to-Source Charge	5.0	–	18	nC	V_{DS} = 200 V
Q_{Gd}	Gate-to-Drain ("Miller") Charge	25	–	65	nC	See note 4
$t_{d(on)}$	Turn-On Delay Time	–	–	35	ns	V_{DD} = 200 V, I_D = 14 A, R_G = 2.35
t_r	Rise Time	–	–	190	ns	See note 4
$t_{d(off)}$	Turn-Off Delay Time	–	–	170	ns	
t_f	Fall Time	–	–	130	ns	

Source-Drain Diode Ratings and Characteristics

	Parameter	Min.	Typ.	Max.	Units	Test Conditions
V_{SD}	Diode Forward Voltage	–	–	1.7	V	T_J = 25°C, I_S = 14 A [3], V_{GS} = 0 V
t_{rr}	Reverse Recovery Time	–	–	1200	ns	T_J = 25°C, I_F = 14 A, di/dt≤100A/µs [3]

Thermal Resistance

	Parameter	Min.	Typ.	Max.	Units	Test Conditions
R_{thJC}	Junction-to-Case	–	–	0.83	°C/W	Mounting surface flat, smooth, and greased
R_{thCS}	Case-to-sink	–	0.21	–		
R_{thJA}	Junction-to-Ambient	–	–	48		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 = 14 A
3. Pulse width ≤ 300 µs; Duty Cycle ≤ 2 %
4. See MIL-S-19500/543

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

Parameter		JANTXV, JANTX, 2N6770	Units
I_D @ V_{GS} = 10V, T_C = 25°C	Continuous Drain Current	12	A
I_D @ V_{GS} = 10V, T_C = 100°C	Continuous Drain Current	7.75	A
I_{DM}	Pulsed Drain Current[1]	48	A
P_D @ T_C = 25°C	Maximum Power Dissipation	150	W
	Linear Derating Factor	1.2	W/°C
V_{GS}	Gate-Source Voltage	± 20	V
E_{AS}	Single Pulse Avalanche Energy [2]	8.0 [4]	mJ
I_{AR}	Avalanche Current[1]	12 [4]	A
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	–	–	.400		V_{GS} = 10 V, I_D = 7.75 A [3]
		–	–	.500		V_{GS} = 10 V, I_D = 12 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} = 400V, 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	55	–	120	nC	V_{GS} = 10 V, I_D = 12 A
Q_{GS}	Gate-to-Source Charge	5.0	–	19	nC	V_{DS} = 250 V
Q_{Gd}	Gate-to-Drain ("Miller") Charge	27	–	70	nC	See note 4
$t_{d(on)}$	Turn-On Delay Time	–	–	35	ns	V_{DD} = 250 V, I_D = 12 A, R_G = 2.35
t_r	Rise Time	–	–	190	ns	See note 4
$t_{d(off)}$	Turn-Off Delay Time	–	–	170	ns	
t_f	Fall Time	–	–	130	ns	

Source-Drain Diode Ratings and Characteristics

Parameter		Min.	Typ.	Max.	Units	Test Conditions
V_{SD}	Diode Forward Voltage	–	–	1.7	V	T_J = 25°C, I_S = 12A [3], V_{GS} = 0 V
t_{rr}	Reverse Recovery Time	–	–	1600	ns	T_J = 25°C, I_F = 12A, di/dt ≤ 100A/µs [3]

Thermal Resistance

Parameter		Min.	Typ.	Max.	Units	Test Conditions
R_{thJC}	Junction-to-Case	–	–	0.83	°C/W	Mounting surface flat, smooth, and greased
R_{thCS}	Case-to-sink	–	0.21	–		
R_{thJA}	Junction-to-Ambient	–	–	48		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 = 12A
3. Pulse width ≤ 300 µs; Duty Cycle ≤ 2 %
4. See MIL-S-19500/543