



SCF2N6796T2
JANTX2N6796
JANTXV2N6796
REF:MIL-PRF-19500/557

**POWER MOSFET
 FOR RUGGED ENVIORNMENTS**

TO-205AF / TO-39

- **N-Channel**
- **100 Volt**
- **< 0.180 Ohms**
- **8 Amp**

DESCRIPTION

SEMICOA's MOSFET technology is designed for rugged environments providing excellent long term reliability. SEMICOA's long heritage providing military grade technology and packaging allows these devices to be used for ground based telecommunications, vehicles, ships, weapon systems and other application where failure is not an option.

FEATURES

- Available in JANTX and JANTXV equivalent levels
- RDS(ON) < 180 mΩ
- Simple Drive Requirements
- Low Gate Charge
- Ease of Paralleling
- Hermetically Sealed
- Die Available

ABSOLUTE MAXIMUM RATINGS

	PARAMETER		UNITS
Id @ Vgs = 10 V, Tc = 25° C	Continuous Drain Current	8.0	A
Id @ Vgs = 10 V, Tc = 100° C	Continuous Drain Current	5.0	
IDM	Pulsed Drain Current (1)	32	
PD@ TC = 25° C	Max Power Dissipation	25	W
	Linear Derating Factor	0.2	W/°C
VGS	Gate to Source Voltage	±20	V
EAS	Single Pulse Avalanche Energy (2)	75	mJ
IAR	Avalanche Current (1)	-	A
TJ TSTG	Operating Junction Storage Temperature Range	-55 to 150	°C
	Lead Temperature	300	°C
	Weight	0.98 typical	g

For footnotes refer to the last page



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Electrical Characteristics @ T_J 25°C (unless otherwise specific)

	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
BV _{DSS}	Drain to Source Breakdown Voltage	100	-	-	V	V _{GS} = 0 V, I _D = 1.0 mA
ΔBV _{DSS} /ΔT _J	Temperature Coefficient of Breakdown Voltage	-	0.10	-	V/°C	Reference to 25 °C, I _D = 1.0 mA
R _{DS(ON)}	Static Drain to Source On-State Resistance	-	-	0.180	Ω	V _{GS} = 10 V, I _D = 5.0 A (4)
		-	-	0.195		V _{GS} = 10 V, I _D = 8.0 A (4)
V _{GS(th)}	Gate Threshold Voltage	2.0	-	4.0	V	V _{DS} = V _{GS} , I _D = 250 μA
g _{sf}	Forward Transconductance	3.0	-	-	S(Ω)	V _{DS} = 15 V, I _{DS} = 5.0 A (4)
I _{DSS}	Zero Gate Voltage Drain Current	-	-	25	μA	V _{DS} = 80 V, V _{GS} = 0 V
		-	-	250		V _{DS} = 80 V, V _{GS} = 0 V, T _J = 125 °C
I _{GSSF}	Gate to Source Leakage Forward			100	nA	V _{GS} = 20 V
I _{GSSR}	Gate to Source Leakage Reverse			-100	nA	V _{GS} = -20 V
Q _g	Total Gate Charge	12.8	-	28.51	nC	V _{GS} = 10 V, I _D = 8.0 A, V _{DS} = 50 V
Q _{gs}	Gate to Source Charge	1.0	-	6.34		
Q _{gd}	Gate to Drain (Miller) Charge	3.8	-	16.59		
T _{d(on)}	Turn On Delay Time	-	-	30	ns	V _{DD} = 50 V, I _D = 8.0 A, R _G = 7.5 Ω
T _r	Rise Time	-	-	75		
T _{d(off)}	Turn Off Delay Time	-	-	40		
T _f	Fall time	-	-	45		
C _{iss}	Input Capacitance	-	-	-	pF	V _{GS} = 0 V, V _{DS} = 25 V, f = 1.0 MHz
C _{oss}	Output Capacitance	-	-	-		
C _{rSS}	Reverse Transfer Capacitance	-	-	-		

Source-Drain Diode Rating and Characteristics

	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
I _S	Continuous Source Current (Body Diode)	-	-	8.0	A	
I _{SM}	Pulse Source Current (Body Diode)	-	-	32	A	
V _{SD}	Diode Forward Voltage	-	-	1.5	V	T _i = 25 °C, I _F = 8.0 A, V _{GS} = 0 V (4)
T _{rr}	Reverse Recovery Time	-	-	300	nS	T _i = 25 °C, I _F = 8.0 A, di/dt < 100 A/μS, V _{DD} ≤ 50 V (4)

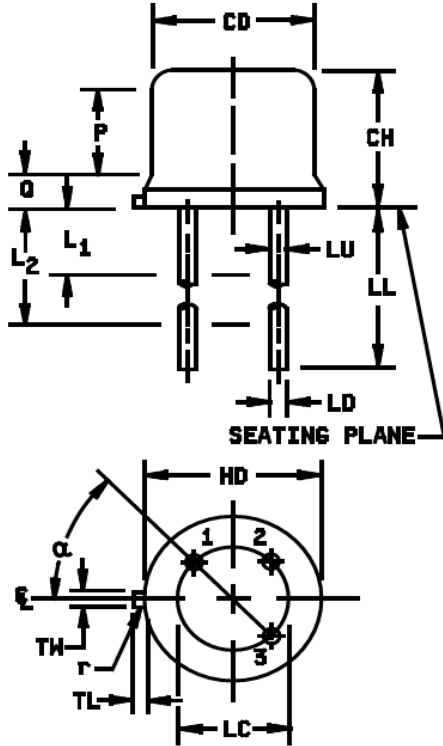
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TO-205 AF Case Outline and Dimensions



Pin Assignment	
Lead 1	Source
Lead 2	Gate
Lead 3	Drain

Symbol	Dimensions			
	Inches		Millimeters	
	Min	Max	Min	Max
CD	.305	.335	7.75	8.51
CH	.160	.180	4.07	4.57
HD	.335	.370	8.51	9.40
LC	.200 typ		5.08 typ	
LD	.016	.021	0.41	0.53
LL	.500	.750	12.70	19.05
LU	.016	.019	0.41	0.48
L1		.050		1.27
L2	.250		6.35	
P	.100		2.54	
Q		.050		1.27
TL	.029	.045	0.74	1.14
TW	.028	.034	0.71	0.86
r		.010		0.25
α	45° TP		45° TP	

Footnotes:

1. Repetitive Rating: Pulse width limited by maximum junction temperature
2. $V_{DD} = 25$ V starting $T_J = 25$ °C, Peak $I_L = 8.0$ A
3. $ISD \leq 8.0$ A, $di/dt \leq 140$ A/ μ S, $V_{DD} \leq 100$ V, $T_J \leq 150$ °C, $R_g = 7.5\Omega$
4. Pulse width ≤ 300 μ S; Duty Cycle $\leq 2\%$

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Data and specification subject to change without notice.



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