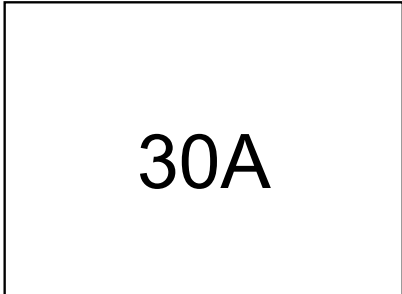


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Features

- Hermetic glass -metal seal
- tested according to IEC standards

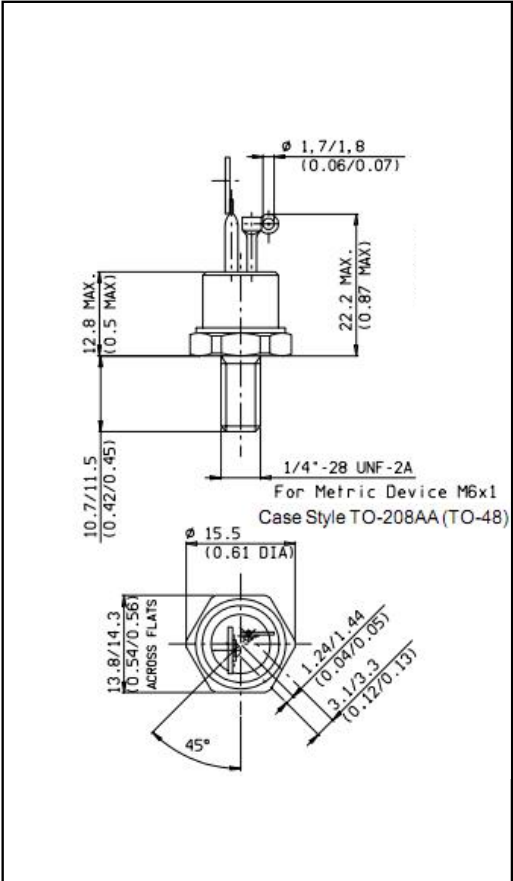


Typical Applications

- DC motor controls
- Controlled DC power supplies
- AC switch and thermal control
- Synchronous motor excitation

Major Ratings and Characteristics

Parameters	T30N12	Units
$I_{T(AV)}$	30	A
@ T_c	85	°C
$I_{T(RMS)}$	48	A
I_{TSM} @ 50Hz	310	A
@ 60Hz	322	A
$I^2 t$ @ 50Hz	523	A ² s
@ 60Hz	477	A ² s
V_{DRM} / V_{RRM}	1200	V
T_q typical	300	μs
T_j range	- 40 to 125	°C



T30N-1200

ELECTRICAL SPECIFICATIONS

Voltage Ratings

Type number	Voltage Code	V_{RRM} / V_{DRM} , maximum repetitive peak reverse voltage V	V_{RSM} , maximum non-repetitive peak rev. voltage V	I_{RRM} / I_{DRM} max. @ $T_J = T_{J\ max}$. mA
T30N12	04	400	500	10
	08	800	900	
	12	1200	1300	
	14	1400	1500	
	16	1600	1700	

On-state Conduction

Parameter	T30N12	Units	Conditions		
$I_{T(AV)}$ Maximum average on-state current @ Case temperature	30	A	180° conduction, half sine wave		
	85	°C			
$I_{T(RMS)}$ Maximum RMS on-state current	48	A			
I_{TSM} Maximum peak, one-cycle non-repetitive surge current	310	A	t = 10ms	No voltage	Sinusoidal half wave, Initial $T_J = T_{J\ max}$.
	322		t = 8.3ms	reapplied	
	260		t = 10ms	100% V_{RRM}	
	272		t = 8.3ms	reapplied	
$I^2 t$ Maximum $I^2 t$ for fusing	522	$A^2 s$	t = 10ms	No voltage	
	477		t = 8.3ms	reapplied	
	368		t = 10ms	100% V_{RRM}	
	336		t = 8.3ms	reapplied	
$I^2 \sqrt{t}$ Maximum $I^2 \sqrt{t}$ for fusing	5227	$A^2 \sqrt{s}$	t = 0.1 to 10ms, no voltage reapplied, $T_J = T_{J\ max}$.		
V_{TM} Maximum on-state or forward	1.64	V	I _{pk} = 63 A, $T_J = 25^\circ C$		
I_H Maximum holding current	130	mA	$T_J = 25^\circ C$, anode supply 6V resistive load		
I_L Typical latching current	200				

Switching

Parameter	T30N12	Units	Conditions
di/dt Max. rate of rise of turned-on current	200	A/μs	Gate pulse 20V, 15Ω, $t_r \leq 1\ \mu s$, $T_J = T_{J\ max}$
t _d ical delay time	0.9	μs	Gate current 1A, $di_g/dt = 1A/\mu s$ $V_d = 0.67\% V_{DRM}$, $T_J = 25^\circ C$
T _q ical turn-off time	300	μs	$I_{TM} = I_{T(AV)}$, $T_J = T_{J\ max}$, $t_p > 200\ \mu s$, $V_R = 100V$, $di/dt = -10A/\mu s$, $dv/dt = 20V/\mu s$,

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Blocking

Parameter	T30N12	Units	Conditions
dv/dt Maximum critical rate of rise of off-state voltage	100	V/μs	T _J = T _J max linear to 100% rated V _{DRM}

Triggering

Parameter	T30N12	Units	Conditions	
P _{GM} Maximum peak gate power	8.0	W	T _J = T _J max	
P _{G(AV)} Maximum average gate power	2.0			
I _{GM} Max. peak positive gate current	1.5	A	T _J = T _J max	
-V _{GM} Maximum peak negative gate voltage	10	V	T _J = T _J max	
I _{GT} DC gate current required to trigger	90 60 35	mA	T _J = - 40°C T _J = 25°C T _J = 125°C Max. required gate trigger current/ voltage are the lowest value which will trigger all units 6V anode-to-cathode applied	
V _{GT} DC gate voltage required to trigger	3.0 2.0 1.0			V
I _{GD} DC gate current not to trigger	2.0			
V _{GD} DC gate voltage not to trigger	0.25	V	T _J = T _J max. V _{DRM} =rated value Max. gate current/ voltage not to trigger is the max. value which will not trigger any unit with rated V anode-to-cathode applied	

Thermal and Mechanical Specification

Parameter	T30N12	Units	Conditions
T _J Max. operating temperature range	-40 to 125	°C	
T _{stg} Max. storage temperature range	-40 to 125		
R _{thJC} Max. thermal resistance, junction to case	0.86	K/W	DC operation
R _{thCS} Max. thermal resistance, c case to heatsink	0.35		Mounting surface, smooth, flat and greased
T Mounting torque, ± 10%	2.8	Nm	
wt Approximate weight	160	g	

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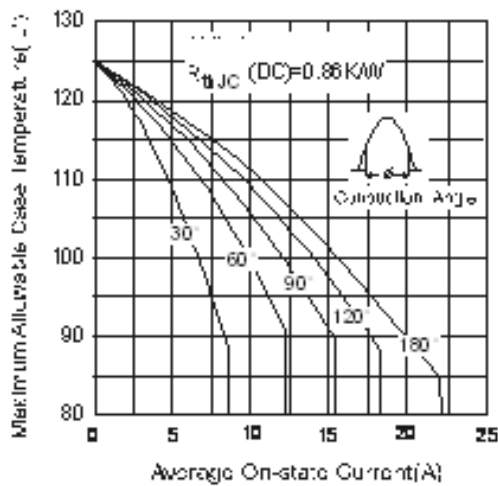


Fig. 1-Current Ratings Characteristics

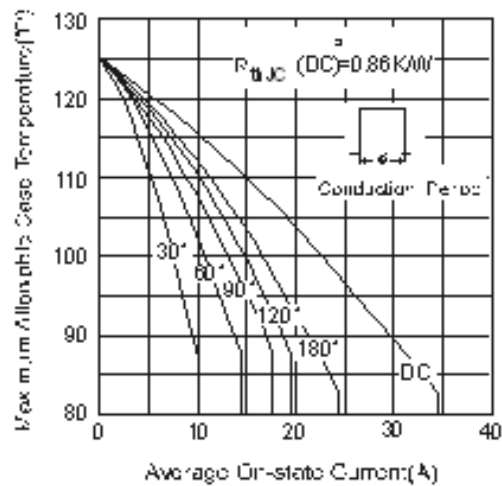


Fig. 2-Current Ratings Characteristics

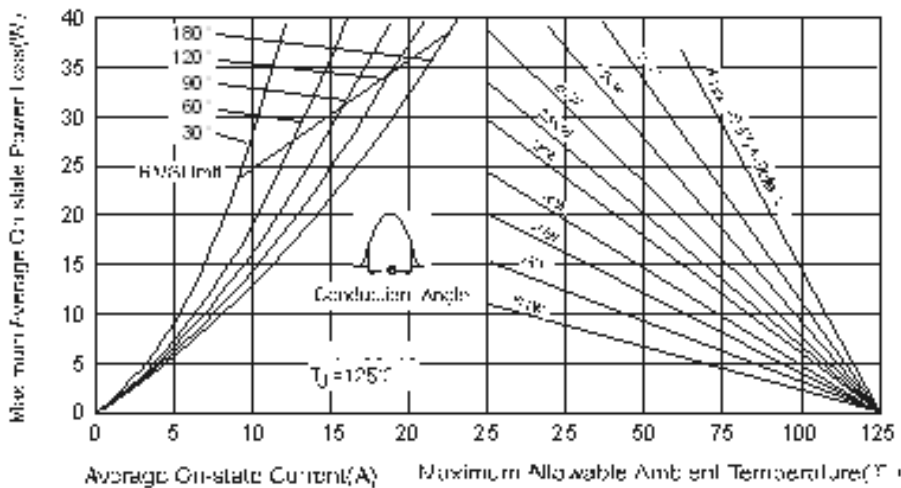


Fig. 3-On-state Power Loss Characteristics

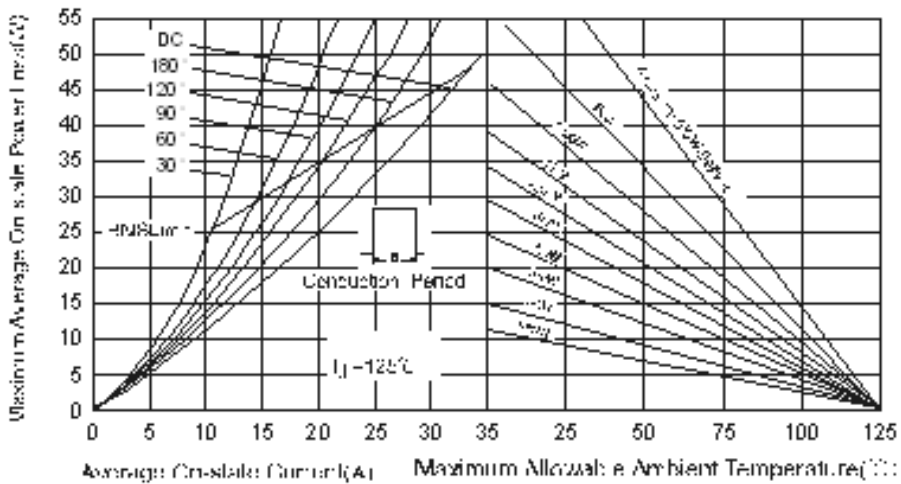


Fig. 4-On-state Power Loss Characteristics