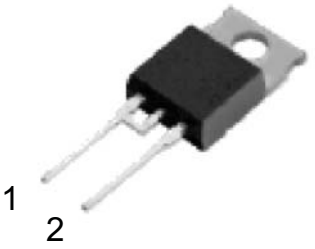
Fast Switching Diode

MUR30600

TO220-2-2



PIN DESCRIPTION

PIN	DESCRIPTION
1	Cathode
2	Anode

■ Features

- Fast Recovery
- Soft Switching
- Low Reverse Recovery Charge
- Low Forward Voltage
- 175°C Operating Temperature
- Easy Paralleling

■ Maximum Ratings T_j = 25℃ unless otherwise specified

Parameter	Symbol	Value	Unit
Repetitive Peak Reverse Voltage	V_{RRM}	600	V
Continuous Forward Current Tc=25℃	I_F	52.3	A
Continuous Forward Current Tc=90℃		34.9	
Surge Non-Repetitive Forward Current Tc=25℃, t_p=10 ms, Sine Halfwave	I_{FSM}	117	
Maximum Repetitive Forward Current Tc=25℃, t_p limited by T_{jmax}, D=0.5	I_{FRM}	81	
Power Dissipation Tc=25℃	P_{tot}	142.9	W
Power Dissipation Tc=90℃		80.9	
Thermal Resistance, Junction - Case	R_{thJC}	1.05	℃/W
Thermal Resistance, Junction - Ambient	R_{thJA}	62	
Operating and Storage Temperature	T_j, T_{stg}	-55 to 175	℃
Soldering Temperature 1.6mm(0.063 in.) From Case for 10s	T_S	255	

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■ Electrical Characteristics T_j = 25℃, unless otherwise specified

Parameter		Symbol	Test Conditions	Min	Typ	Max	Unit
Reverse Leakage Current	T_j=25℃	I_R	V_R=600V			50	μA
	T_j=150℃					2500	
Forward Voltage Drop	T_j=25℃	V_F	I_F=30A		1.5	2	V
	T_j=150℃				1.5		
Reverse Recovery Time	T_j=25℃	t_{rr}	V_R=400V, I_F=30A, di_F/dt=1000A/μs		126		ns
	T_j=125℃				171		
	T_j=150℃				178		
Reverse Reverse Current	T_j=25℃	I_{rrm}	V_R=400V, I_F=30A, di_F/dt=1000A/μs		19		A
	T_j=125℃				22		
	T_j=150℃				24		
Reverse Recovery Charge	T_j=25℃	Q_{rr}	V_R=400V, I_F=30A, di_F/dt=1000A/μs		1100		nC
	T_j=125℃				1950		
	T_j=150℃				2150		
Reverse Recovery Softness Factor	T_j=25℃	S	V_R=400V, I_F=30A, di_F/dt=1000A/μs		4		
	T_j=125℃				4.6		
	T_j=150℃				4.8		

■ Marking

Marking	30600

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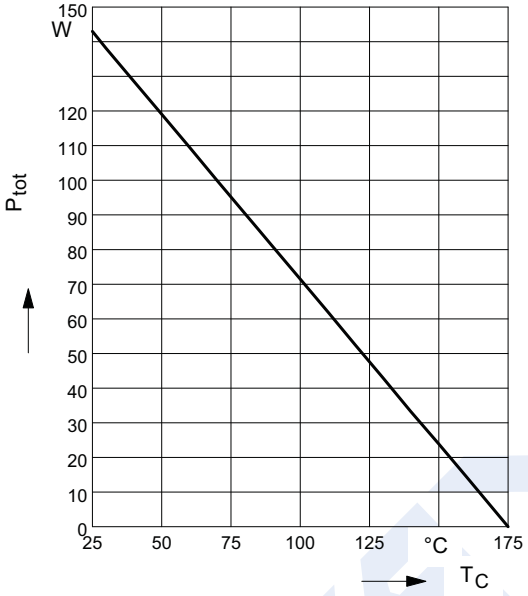
■ Typical Characterisitics

1 Power dissipation

$P_{tot} = f(T_C)$

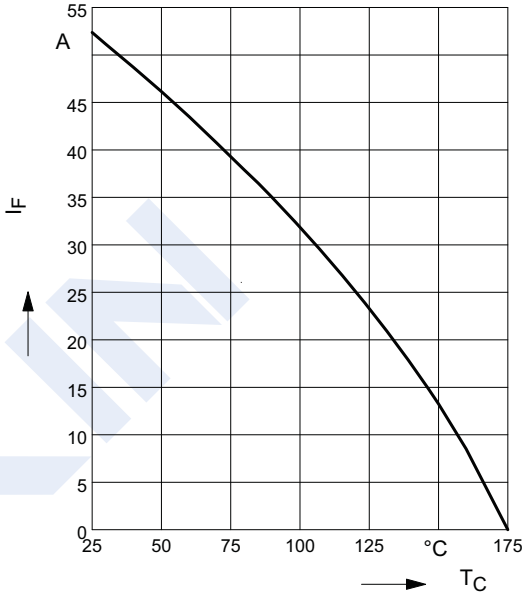
parameter: $T_j \leq 175$ °C



2 Diode forward current

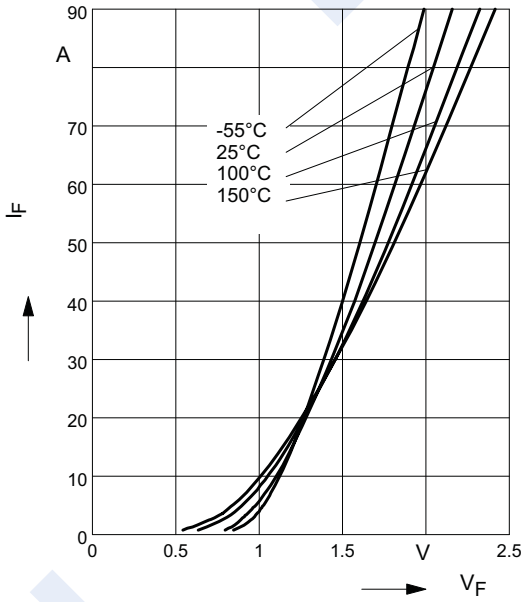
$I_F = f(T_C)$

parameter: $T_j \leq 175$°C



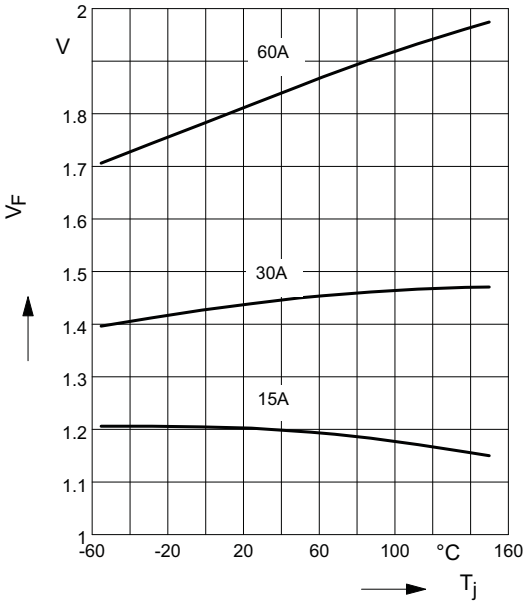
3 Typ. diode forward current

$I_F = f(V_F)$



4 Typ. diode forward voltage

$V_F = f(T_j)$



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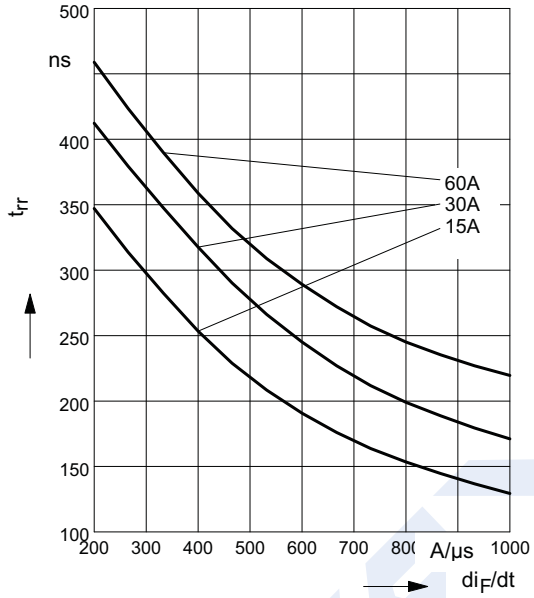
■ Typical Characterisitics (Continued)

5 Typ. reverse recovery time

t_{rr} = f (di_F/dt)

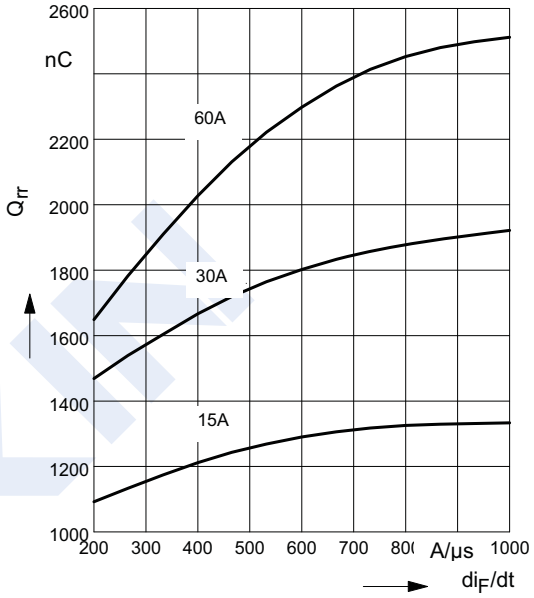
parameter: V_R = 400V, T_j = 125°C



6 Typ. reverse recovery charge

Q_{rr}=f(di_F/dt)

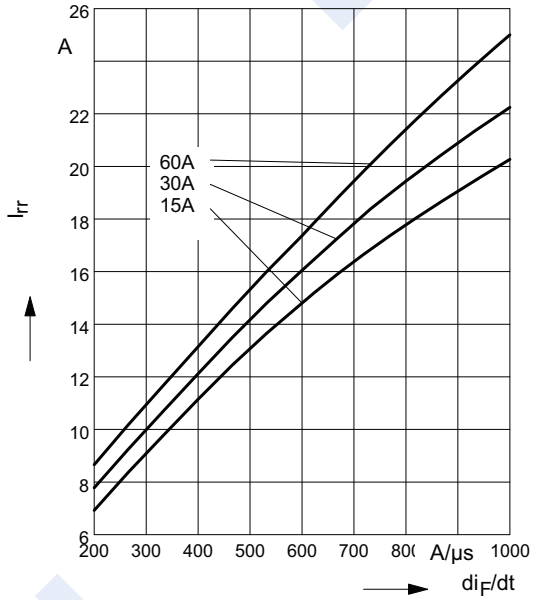
parameter: V_R = 400V, T_j = 125 °C



7 Typ. reverse recovery current

I_{rr} = f (di_F/dt)

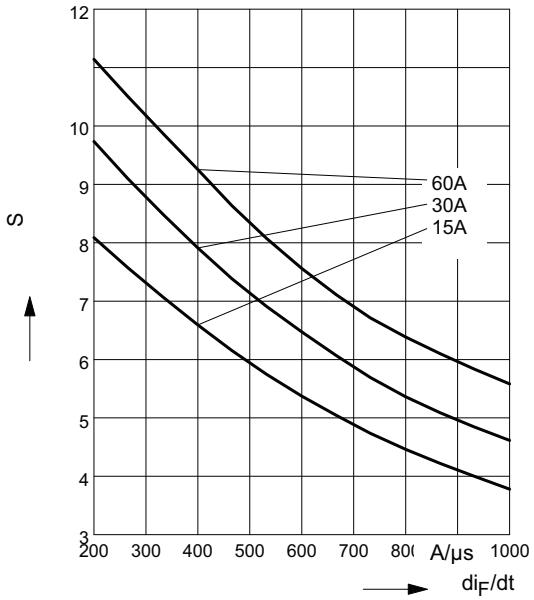
parameter: V_R = 400V, T_j = 125°C



8 Typ. reverse recovery softness factor

S = f(di_F/dt)

parameter: V_R = 400V, T_j = 125°C



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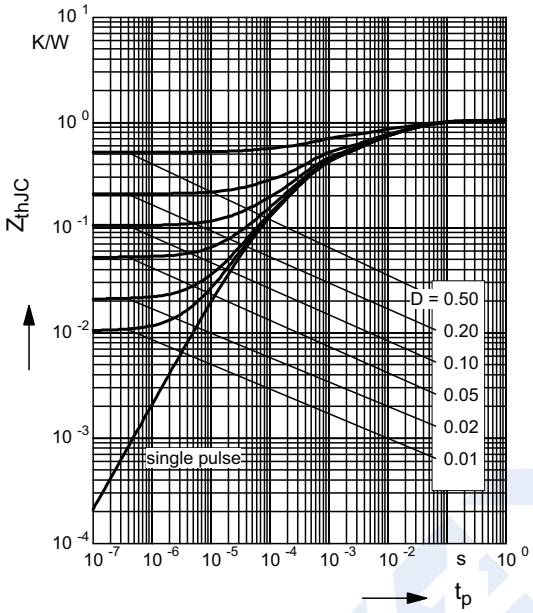
■ Typical Characterisitics (Continued)

9 Max. transient thermal impedance

$Z_{thJC} = f(t_p)$

parameter : $D = t_p/T$



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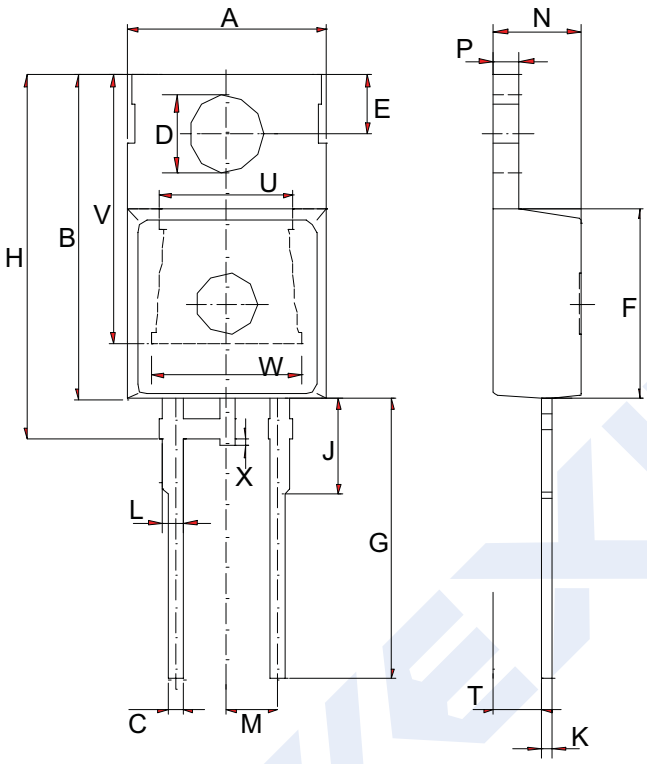
■ Package Outline Dimensions

TO220-2-2



symbol	dimensions			
	[mm]		[inch]	
	min	max	min	max
A	9.70	10.10	0.3819	0.3976
B	15.30	15.90	0.6024	0.6260
C	0.65	0.85	0.0256	0.0335
D	3.55	3.85	0.1398	0.1516
E	2.60	3.00	0.1024	0.1181
F	9.00	9.40	0.3543	0.3701
G	13.00	14.00	0.5118	0.5512
H	17.20	17.80	0.6772	0.7008
J	4.40	4.80	0.1732	0.1890
K	0.40	0.60	0.0157	0.0236
L	1.05 typ.		0.41 typ.	
M	2.54 typ.		0.1 typ.	
N	4.4 typ.		0.173 typ.	
P	1.10	1.40	0.0433	0.0551
T	2.4 typ.		0.095 typ.	
U	6.6 typ.		0.26 typ.	
V	13.0 typ.		0.51 typ.	
W	7.5 typ.		0.295 typ.	
X	0.00	0.40	0.0000	0.0157