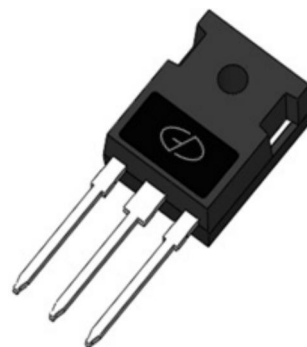


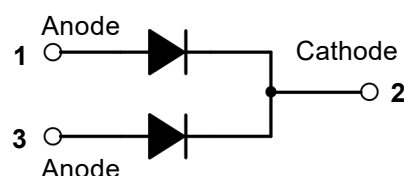
30A,200V Ultrafast Recovery Rectifier

Features

- FRED Wafer Construction
- Low forward drop voltage, low power loss
- High Surge Current Capability
- Plastic package has underwriters Laboratory Flammability Classification 94V-0
- Halogen-free according to IEC 61249-2-21



TO-247AD



Applications

- SMPS
- Adapter
- Server Power

Mechanical Data

- Case: Epoxy, Molded
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead Temperature for Soldering Purposes: 260°C Max. for 10 sec
- Shipped 30 units per plastic tube

Maximum Ratings & Electrical Characteristics (T_A=25°C unless otherwise noted)

Parameter	Symbol	SMUR3020PT	Unit
Maximum repetitive peak reverse voltage	V _{RRM}	200	V
Working peak reverse voltage	V _{RWM}	200	V
Maximum DC blocking voltage	V _{DC}	200	V
Maximum average forward rectified current	I _{F(AV)}	30	A
Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load per diode	I _{FSM}	150	A
Voltage rate of change (rated V _R)	dv/dt	10000	V/μS
Operating junction temperature range	T _J	-55 to +150	°C
Storage temperature range	T _{STG}	-55 to +150	°C
Power dissipation, on infinite heat sink at T _L =75°C	P _D	50	W

Electrical Specifications ($T_A=25^{\circ}\text{C}$ unless otherwise noted)					
Parameter	Symbol	Test Conditions	Typ	Max	Unit
Forward drop voltage (Note1)	V_F	$I_F=15\text{A}, T_J=25^{\circ}\text{C}$	0.98	1.12	V
		$I_F=15\text{A}, T_J=125^{\circ}\text{C}$	-	0.95	
		$I_F=30\text{A}, T_J=25^{\circ}\text{C}$	-	-	
		$I_F=30\text{A}, T_J=125^{\circ}\text{C}$	-	-	
Reverse leakage current @VR (Note2)	I_R	$T_J=25^{\circ}\text{C}$	-	10	μA
		$T_J=100^{\circ}\text{C}$	-	500	
Reverse recovery time	t_{rr}	$I_F=0.5\text{A},$ $I_R=1.0\text{A}, I_{RR}=0.25\text{A}$	-	35	ns

Thermal-Mechanical Specifications ($T_A=25^{\circ}\text{C}$ unless otherwise noted)			
Parameter	Symbol	Typ	Unit
Thermal Resistance, Junction to Case	$R_{\theta JC}$	0.8	$^{\circ}\text{C}/\text{W}$
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	62.5	$^{\circ}\text{C}/\text{W}$

Note:

1. Pulse test with $PW=0.3\text{ms}$, duty cycle=2%
2. Pulse test with $PW=30\text{ms}$

Ratings and Characteristics Curves

($T_A = 25^\circ\text{C}$ unless otherwise noted)

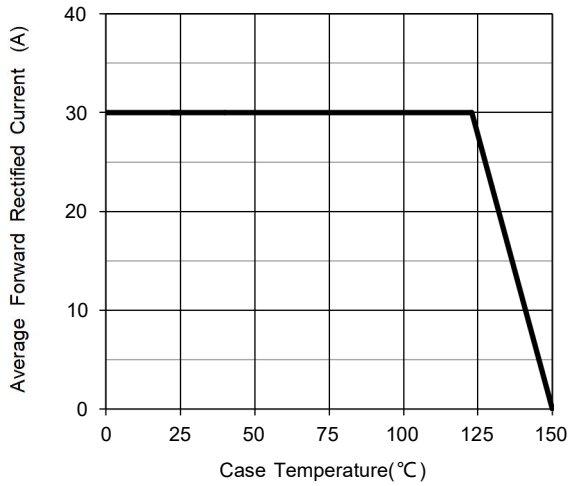


Fig.1 – Forward Current Derating Curve

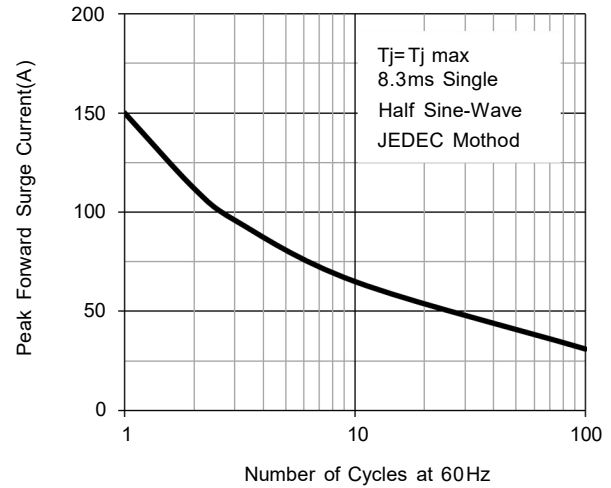


Fig.2 – Maximum Non-Repetitive Surge Current

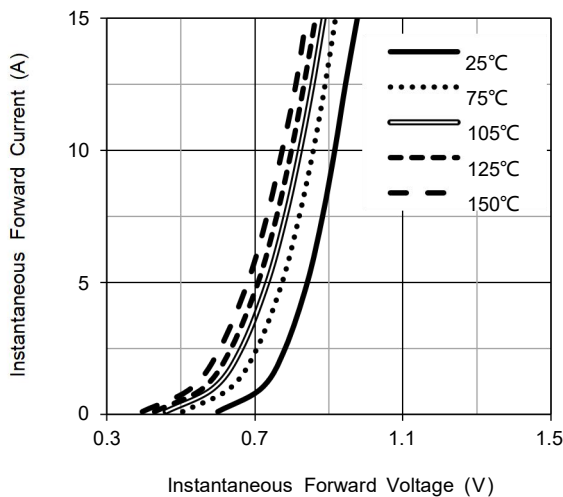


Fig.3 – Typical Forward Voltage Characteristics

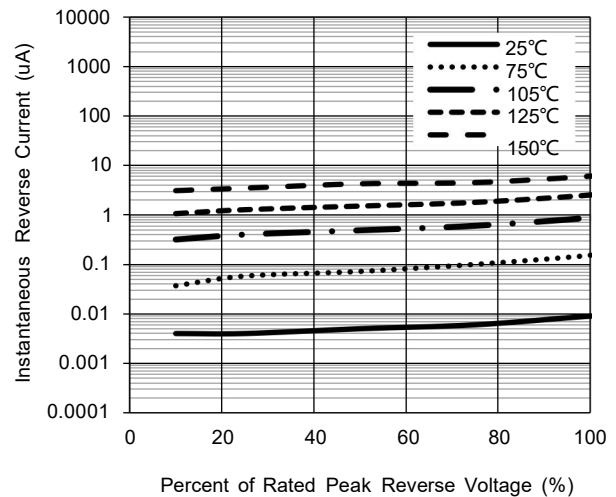


Fig.4 – Typical Reverse Current Characteristics

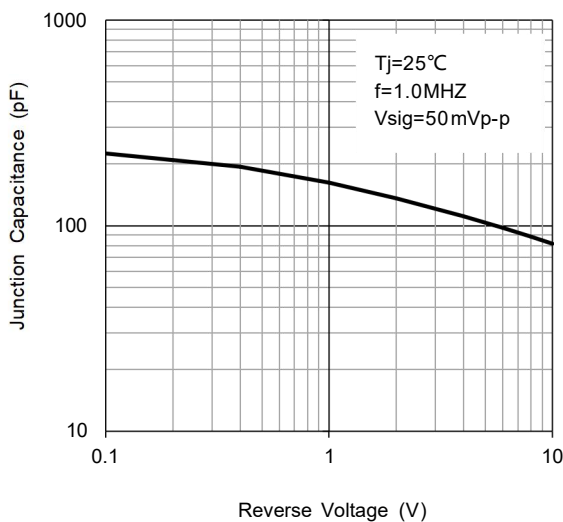
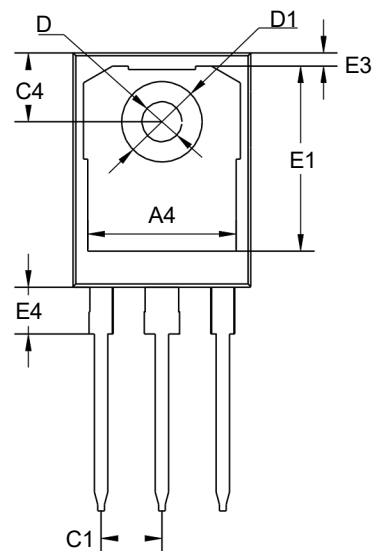
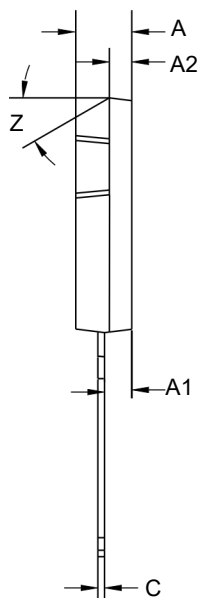
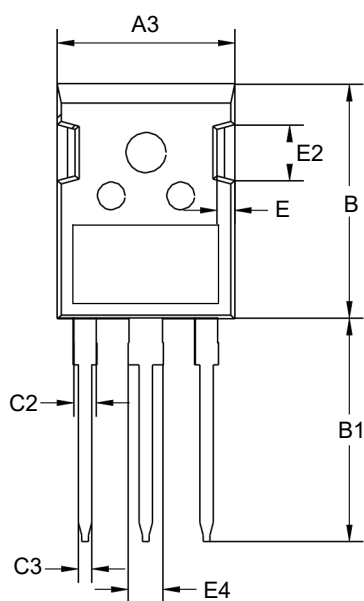


Fig.5 – Typical Junction Capacitance

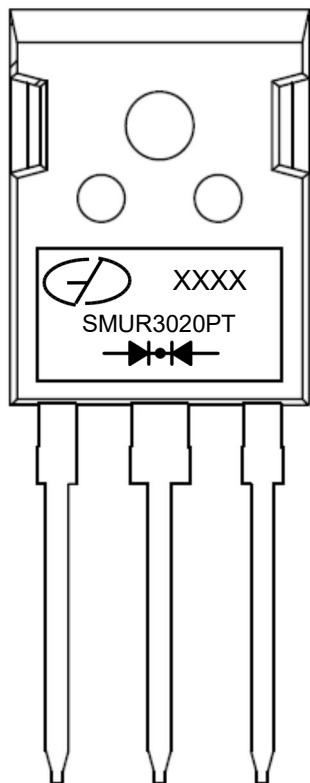
Package Outline Dimensions (Unit: millimeters)

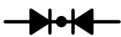
TO-247AD



TO-247AD							
	Min.	Nom.	Max.		Min.	Nom.	Max.
A	4.7	5	5.2	C3	1.1	1.2	1.3
A1	2.3		2.5	C4	6.04	6.15	6.30
A2	1.9	2	2.1	D	3.5	3.6	3.7
A3	15.48	15.88	16.28	D1	7	7.19	7.4
A4	13.06	13.26	13.56	E	1.5	1.6	1.7
B	20.8	20.95	21.1	E1		16.55	
B1	19.8	20	20.32	E2	4.9	5.0	5.1
C	0.5	0.6	0.7	E3	0.95	1.17	1.35
C1	5.34	5.44	5.54	E4		4.17	4.5
C2		2		Z		30°	

Marking Outline



1. Logo Mark: 
2. Part Name: SMUR3020PT
3. Date Code: XXXX
4. Polarity : 

Revision History

Document Version	Date of release	Description of changes
Rev.A	2019.01.10	Released Datasheet
Rev.B	2021.01.19	Modify document format
Rev.C	2022.05.07	Update ratings and characteristics curves
Rev.D	2025.08.20	Add Maximum Ratings item (Pd)

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