



## JPUR0512K

### EPI PLANAR ULTRAFAST SOFT RECOVERY RECTIFIER

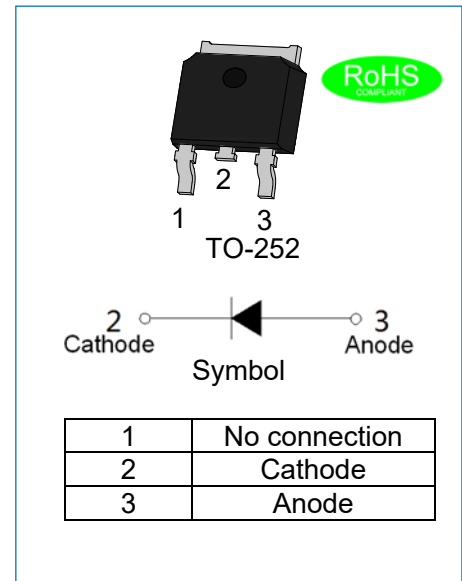
Rev.1.2

#### DESCRIPTION

- ✧ Plastic package has underwriters laboratory flammability classification 94V-0
- ✧ Lead free in comply with EU RoHS 2011/65/EU directives
- ✧ Low reverse leakage current
- ✧ Ultrafast recovery time and high speed switching
- ✧ Epitaxial planar technology
- ✧ 5th Generation soft fast recovery characteristics

#### MECHANICAL DATA

- ✧ Case: TO-252 molded plastic
- ✧ Terminals: Solder plated, solderable per J-STD-002
- ✧ Weight: 0.329 gram



#### ABSOLUTE MAXIMUM RATING (Rating at 25°C ambient temperature unless otherwise specified.)

Parameter	Symbol	JPUR0512K	Unit
Maximum repetitive peak reverse voltage	$V_{RRM}$	1200	V
Maximum RMS voltage	$V_{RMS}$	840	V
Maximum DC blocking voltage	$V_{DC}$	1200	V
Average forward current at $T_{mb}=144^{\circ}C$	$I_{F(AV)}$	5	A
Peak forward surge current: 8.3ms single half sine-wave superimposed on rated load	$I_{FSM}$	60	A
Peak forward surge current: 10ms single half sine-wave superimposed on rated load	$I_{FSM}$	55	A
Junction temperature and storage temperature range	$T_j, T_{stg}$	-55 to +175	$^{\circ}C$

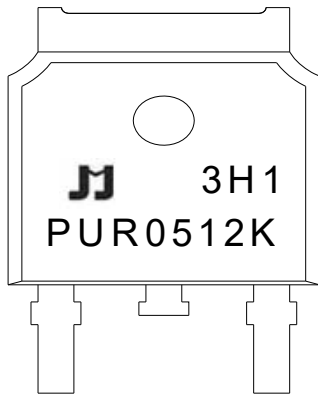
**ELECTRICAL CHARACTERISTICS**(Rating at 25°C ambient temperature unless otherwise specified.)

Parameter		Symbol	Min.	Typ.	Max.	Unit
Forward voltage	$I_F=5A, T_J=25^\circ C$	$V_F$	-	1.8	2.2	V
	$I_F=5A, T_J=150^\circ C$		-	1.55	-	
Reverse current	$V_R=1200V, T_J=25^\circ C$	$I_R$	-	-	5	$\mu A$
	$V_R=1200V, T_J=150^\circ C$		-	-	200	
Reverse recovery time	$I_F=1A, V_R=30V,$ $di/dt=100A/\mu s, T_J=25^\circ C$	$t_{rr}$	-	-	50	ns
	$I_F=5A, V_R=400V,$ $di/dt=500A/\mu s, T_J=25^\circ C$		-	35	-	
	$I_F=5A, V_R=400V,$ $di/dt=500A/\mu s, T_J=125^\circ C$		-	75	-	
	$I_F=5A, V_R=400V,$ $di/dt=500A/\mu s, T_J=150^\circ C$		-	80	-	
Peak reverse recovery current	$I_F=5A, V_R=400V,$ $di/dt=500A/\mu s, T_J=25^\circ C$	$I_{RM}$	-	7.8	-	A
	$I_F=5A, V_R=400V,$ $di/dt=500A/\mu s, T_J=125^\circ C$		-	12.6	-	
	$I_F=5A, V_R=400V,$ $di/dt=500A/\mu s, T_J=150^\circ C$		-	14	-	
Recovered charge	$I_F=5A, V_R=400V,$ $di/dt=500A/\mu s, T_J=25^\circ C$	$Q_r$	-	150	-	nC
	$I_F=5A, V_R=400V,$ $di/dt=500A/\mu s, T_J=125^\circ C$		-	550	-	
	$I_F=5A, V_R=400V,$ $di/dt=500A/\mu s, T_J=150^\circ C$		-	700	-	

**THERMAL RESISTANCES**

Symbol	Parameter	Min.	Typ.	Max.	Unit
$R_{th(j-mb)}$	Thermal resistance from junction to mounting base	-	-	2.5	$^\circ C/W$
$R_{th(j-a)}$	Thermal resistance from junction to ambient	-	60	-	$^\circ C/W$

MARKING



PUR	Planar Ultrafast Recovery Rectifier
05	$I_{F(AV)}=5A$
12	$V_{RRM}:1200V$
K	Package:TO-252

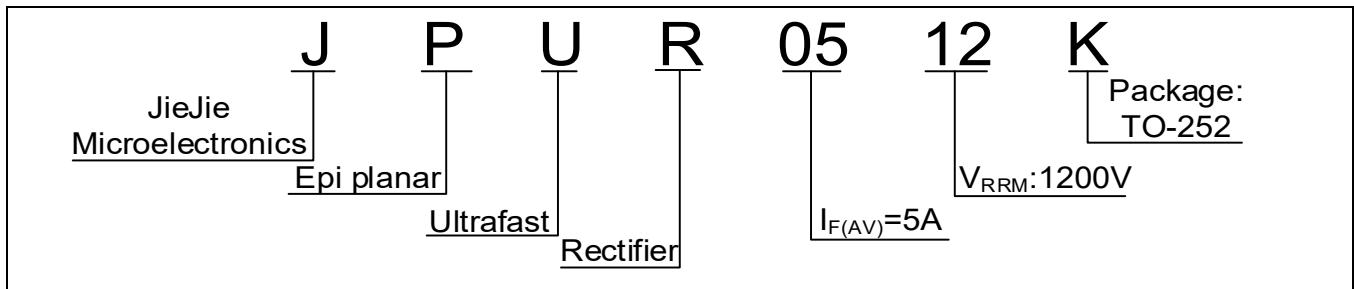
xH1: Month, 1/2/3~9/A/B/C

3x1:

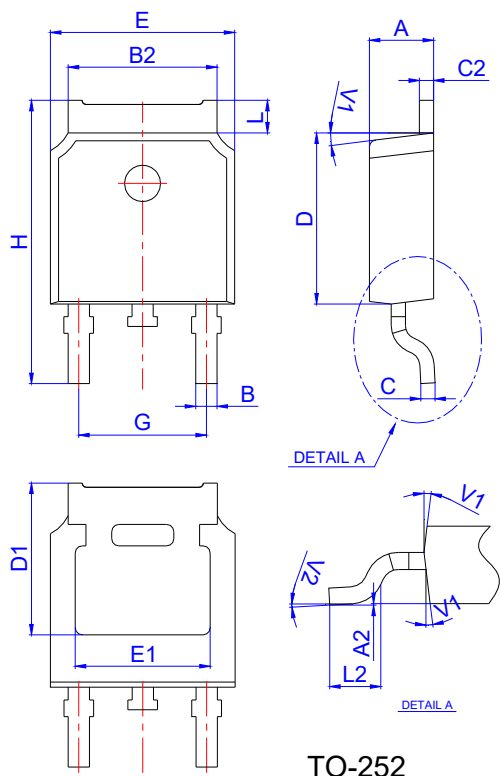
2018	2019	2020	2021	2022	2023	2024
H	I	J	K	L	M	N
2025	2026	2027	2028	2029	2030	...
O	P	Q	R	S	T	...

3Hx: Batch number

ORDERING INFORMATION

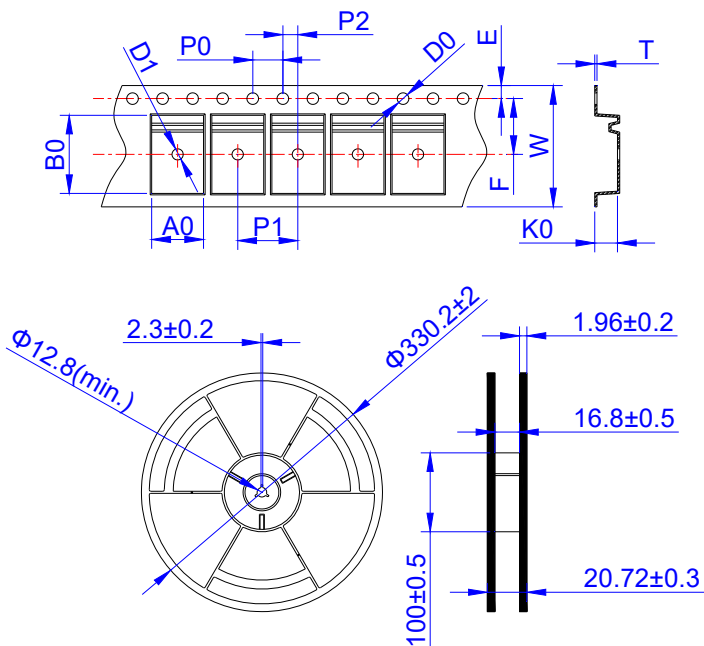


**PACKAGE MECHANICAL DATA**



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.10		2.50	0.083		0.098
A2	0		0.10	0		0.004
B	0.66		0.86	0.026		0.034
B2	5.18		5.48	0.202		0.216
C	0.40		0.60	0.016		0.024
C2	0.44		0.58	0.017		0.023
D	5.90		6.30	0.232		0.248
D1	5.30REF			0.209REF		
E	6.40		6.80	0.252		0.268
E1	4.63			0.182		
G	4.47		4.67	0.176		0.184
H	9.50		10.70	0.374		0.421
L	1.09		1.21	0.043		0.048
L2	1.35		1.65	0.053		0.065
V1		7°			7°	
V2	0°		6°	0°		6°

**REEL SPECIFICATION -TO-252**



Ref.	Dimensions	
	Millimeters	Inches
W	Max:16.3	Max:0.642
E	1.75±0.10	0.069±0.004
F	7.50±0.10	0.295±0.004
D0	1.55±0.05	0.061±0.002
D1	Min:1.50	Min:0.059
P0	4.00±0.10	0.157±0.004
P1	8.00±0.10	0.315±0.004
P2	2.00±0.10	0.079±0.004
A0	6.90±0.10	0.272±0.004
B0	10.50±0.10	0.413±0.004
K0	2.70±0.10	0.106±0.004
T	0.30±0.05	0.012±0.002

OUTLINE	UNIT WEIGHT (g/PCS) TYP	REEL (PCS)	PER CARTON (PCS)	TAPE & REEL
TAPING	0.329	2,500	25,000	13inch

CHARACTERISTICS CURVE

FIG.1 Typical forward characteristics

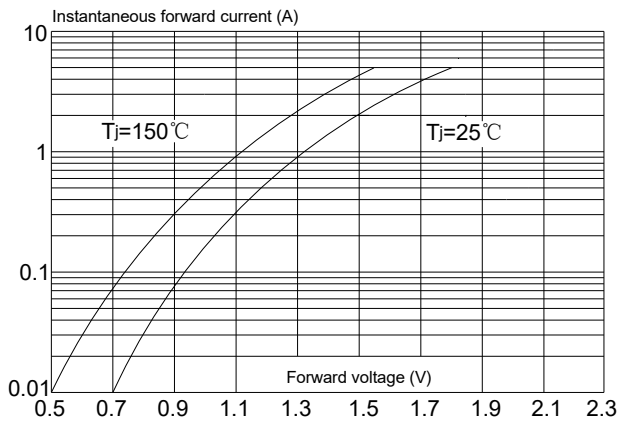


FIG.2 Typical reverse characteristics

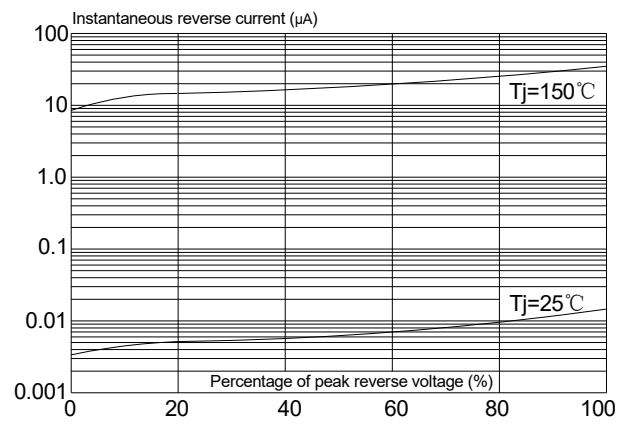


FIG.3 Maximum non-repetitive peak forward surge current(8.3ms single half sine-wave)

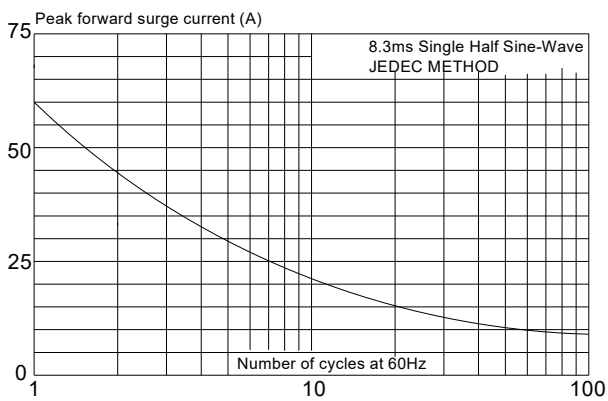


FIG.4 Maximum non-repetitive peak forward surge current(10ms single half sine-wave)

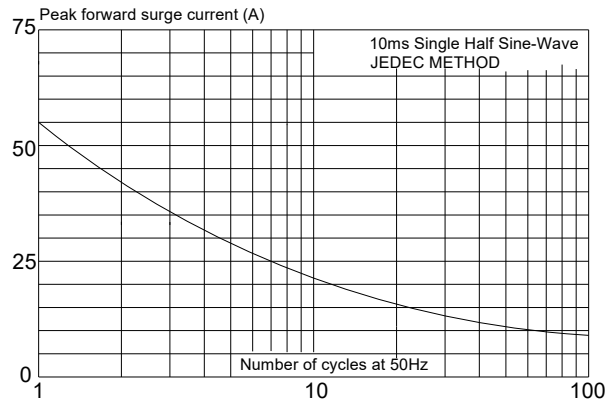


FIG.5 Forward current derating curve

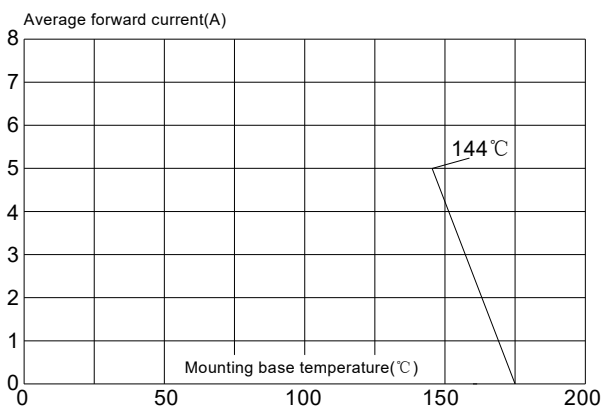
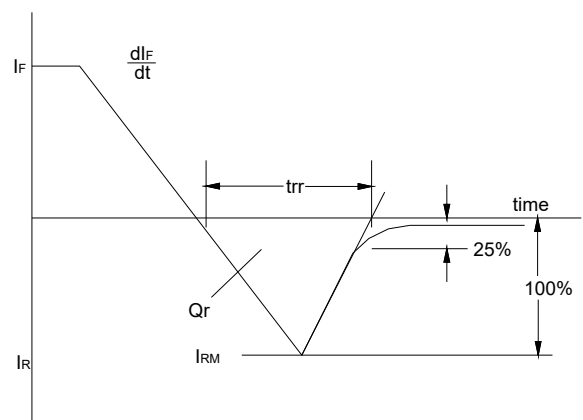


FIG.6 Reverse recovery definitions




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