

TSC PLANAR FREDS (FAST RECOVERY EPITAXIAL DIODES) SET THE BAR FOR VALUE, POWER DENSITY AND PERFORMANCE

Taiwan Semiconductor, a global supplier of discrete power electronics devices, LED drivers, analog ICs and ESD protection devices, announces the addition to our 100V & 200V Planar FRED families of fast recovery epitaxial diodes. These high-reliability (175°C, AEC-Q101 qualified) FREDS offer optimized switching speed vs reverse recovery time. Their soft reverse recovery results in lower EMI-RFI while achieving low losses and increased efficiency.



PLANAR FRED FAMILIES PROVIDES A NUMBER OF BENEFITS:

- **Low Reverse Leakage** – Industry-leading maximum I_r (1 μ A @ $T_j=25^\circ\text{C}$) improves efficiency and offers a more controlled switching response between forward and reverse conduction modes.
- **Fast Switching and Reverse Recovery Times** – Increases efficiency in a wide range of power electronics designs from medium voltage to high voltage applications while lowering EMI-RFI and reducing system cost of snubber and filtering design by lowering complexity.
- **Low Reverse Recovery Charge** – Typical Q_{RR} (27 nC @ $I_F=1\text{A}$, $di/dt=200\text{A}/\mu\text{s}$, $V_R=100\text{V}$) lowers parasitic ringing and further reduces EMI-RFI, simplifies snubber design while lowering switching speed while increasing power density.
- **175°C AEC-Q Automotive Qualified Available** – All parts in the family meet stringent automotive reliability and performance criteria –PPAP able (Production Part Approval Process).
- **Global Materials Compliance** – Devices meet Global RoHS, halogen-free (per IEC-61249-2-21), WEEE, REACH, California Prop. 65, JESD-201 Class 2 Whisker Test and more.
- **Multiple Small industry Standard Surface Mount Packages** – Optimized for reducing production costs via automated placement. Low profile packaging with heat-spreader contacts provides excellent thermal density performance.

Applications include automotive alternator charging regulators in 12, 24 to 28 and 48 Volt systems; POE power systems, protection and blocking circuitry; general purpose switching power conversion, snubber circuits, antiparallel diodes in high frequency switching circuits; freewheeling diodes in converters, chargers and motor control circuits.


KEY PARAMETERS

PART NUMBER	V_{RRM} (V)	I_F (A)	V_F (V)	I_R (μ A)	T_{rr} (ns)	T_J ($^{\circ}$ C)	PACKAGE
PU1xMH	100~200	1	1.05	1	25	175	Micro SMA
PU2xMH	100~200	2	1.05	1	25	175	Micro SMA
PU1xLWH	100~200	1	0.93	2	25	175	SOD-123W
PU2xLWH	100~200	2	0.93	2	25	175	SOD-123W
PU1xLSH	100~200	1	0.93	2	25	175	SOD-123HE
PU2xLSH	100~200	2	0.93	2	25	175	SOD-123HE
PU1xFSH	100~200	1	0.93	2	25	175	SOD-128
PU2xFSH	100~200	2	0.93	2	25	175	SOD-128
PU3xFSH	100~200	3	0.93	2	25	175	SOD-128
PU1xAH	100~200	1	0.93	2	25	175	SMA
PU2xAH	100~200	2	0.93	2	25	175	SMA
PU3xAH	100~200	3	0.93	2	25	175	SMA
PU2xBH	100~200	2	0.93	2	25	175	SMB
PU3xBH	100~200	3	0.93	2	25	175	SMB
PU4xBH	100~200	4	0.93	2	25	175	SMB
PU6xBH	100~200	6	0.94	2	25	175	SMB
PU3xCH	100~200	3	0.93	2	25	175	SMC
PU4xCH	100~200	4	0.93	2	25	175	SMC
PU6xCH	100~200	6	0.94	2	25	175	SMC
PUUP3xH	100~200	3	0.93	2	25	175	SMPC4.6U
PUUP4xH	100~200	4	0.93	2	25	175	SMPC4.6U
PUUP6xH	100~200	6	0.94	2	25	175	SMPC4.6U
PUUP8xH	100~200	8	1.05	2	25	175	SMPC4.6U

Note: x = B: 100V, x=D: 200V

For pricing and more information, please contact TSC sales or authorized distributors.