



New Product Announcement

SDT4U40EP3
SDM4A40EP3
SDM5U45EP3

Industry's Smallest 4A and 5A Schottky Rectifiers Set New Benchmarks in Current Density

The DIODES™ SDM5U45EP3 (5A, 45V), DIODES™ SDM4A40EP3 (4A, 40V), and DIODES™ SDT4U40EP3 (4A, 40V) Schottky rectifiers achieve the industry's highest current densities in their class, addressing market demands for smaller and more powerful electronic systems.

The SDT4U40EP3 is the industry's smallest 4A trench Schottky rectifier, being the first ever in a 1608 package. It takes up >90% less PCB area, and together with its slim off board profile, occupies <2% volume than competing SMA packaged devices. Its 800A/cm² current density, also the highest in the industry for a trench Schottky, is thanks to the patent-pending innovative cathode design and manufacturing processes utilized. The resulting ultra-low forward voltage performance (0.47V typical) minimizes power losses, enabling the design of higher efficiency systems. Furthermore, its superior avalanche capability makes it robust enough to deal with extreme operating conditions such as transient voltages.

The X3-TSN1616-2-packaged SDM5U45EP3 has a 2mm² footprint, while the X3-TSN1608-2-packaged SDM4A40EP3 and SDT4U40EP3's 1.28mm² footprint enable system designers to maximize board real estate in modern and highly integrated consumer products. These ultra-thin CSPs, with their 0.25mm (typical) profiles, have shortened thermal paths—resulting in greater power dissipation which reduces thermal BOM costs and increases reliability.

These environmentally friendly CSP-packaged devices are fully RoHS 3.0 compliant with no exemptions.

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The DIODES™ Advantage

Small form-factor CSP Schottky rectifiers provide the highest current density and maximize board real estate.

- **High Current Density**
Increases power density designs
- **Low Thermal Resistance**
Reduces thermal BOM costs and increases reliability
- **Superior Avalanche Capability**
Maintains transient suppression and robust system stability
- **Space-Saving PCB Footprint of 1.28mm²**
Occupies at least 90% less PCB area than that of SMA
- **Off-Board Profile of 0.25mm (Typical)**
Maintains >88% lower profile than SMA, enabling an ultra-compact design

Applications

- Consumer electronics
- Portables/wearables
- IoT
- Computers
- Industrial devices

Circuit Function

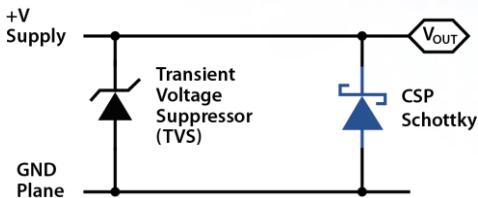
- Blocking
- Reverse-polarity protections
- Electrical over-stress protections
- Free-wheeling



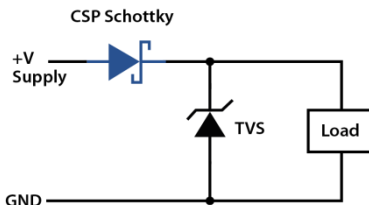
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Typical Applications

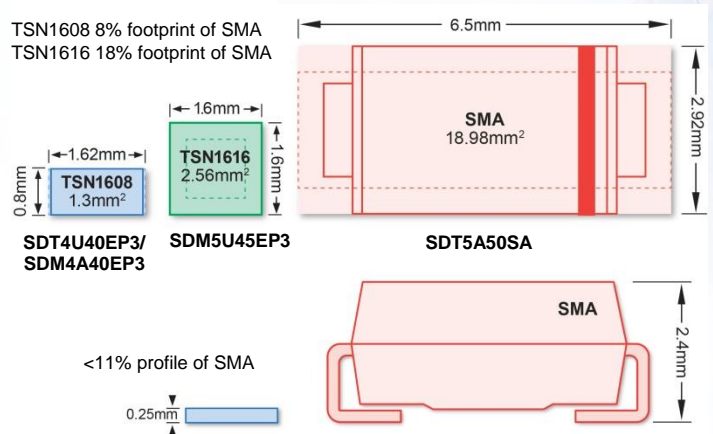


EOS Protection



Blocking or Reverse Polarity Protection

Footprint and Profile Comparison



Product Portfolio (visit diodes.com for full range)

Product	V_{RRM} (V)	I_o (A)	Package	Product	V_{RRM} (V)	I_o (A)	Package
SDM01U50CP3	50	0.1	X3-WLB0603-2	SDM1A40CP3	40	1	X3-DSN1006-2
SDM02L30CP3	30	0.2	X3-WLB0603-2	SDM2A20CSP	20	2	X3-WLB1406-2
SDM02M30DCP3	30	0.4*	X3-DSN1006-3	SDM2U30CSP	30	2	X3-WLB1608-2
SDM05U20CSP	20	0.5	X3-WLB1006-2	SDT2L40CP3	40	2	X3-DSN1608-2
SDM05A30CP3	30	0.5	X3-WLB0603-2	SDM4A30EP3	30	4	X3-TSN1608-2
SDM05U40CSP	40	0.5	X3-WLB1006-2	SDT4U40EP3	40	4	X3-TSN1608-2
SDM1L20DCP3	20	1*	X3-DSN1006-3	SDM4A40EP3	40	4	X3-TSN1608-2
SDM1U20CSP	20	1	X3-WLB1406-2	SDM5U45EP3	45	5	X3-TSN1616-2
SDM1U30CP3	30	1	X3-DSN1006-2				

* Dual configuration product, I_o is total value.

Ordering Information

Orderable Part Number	Package	Packing	
		Quantity	Carrier
SDT4U40EP3-7B	X3-TSN1608-2	10,000	Tape & Reel
SDM4A40EP3-7B	X3-TSN1608-2	10,000	Tape & Reel
SDM5U45EP3-7	X3-TSN1616-2	5,000	Tape & Reel