Type SDT123 thyristor is suitable for phase control applications such as HVDC valves, static VAR compensators and synchronous motor drives. The silicon junction is manufactured by the proven multi-diffusion process and is supplied in an industry standard disc-type package, ready to mount to forced or naturally cooled heat dissipators using commercially available mechanical clamping hardware.

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**SDT123**  
53mm / 9kV THYRISTOR

---

**ON-STATE CHARACTERISTIC**

- On-State Current, It (amperes)
- On-State Voltage, Vt (volts)

**MECHANICAL OUTLINE**

- D=1.07 in (27.2 mm)
- B=Ø=1.90 in (48.3 mm)
- A=Ø=2.96 in (75.2 mm)

**PRINCIPAL RATINGS AND CHARACTERISTICS**

- Repetitive peak off-state & reverse voltage
  - V(t) = 0, up to 9000 V
  - V(t) = 0, to 110°C, 0.8Vt
- Repetitive working
  - Crest voltage
  - Off-state & reverse
  - Leakage current
- Average on-state current
- Peak half-cycle non-rep surge current
- On-state voltage
- Critical rate of rise of on-state current
- Thermal resistance
- Recovery current
- Repetitive peak off-state voltage
- Critical rate of rise of off-state voltage
- Recovery Current
- Maximum snap factor
- Turn-on delay
- Turn-off time
- Thermal resistance
- Eexternally applied clamping force
- Gate Drive

**REPETITIVE PEAK REVERSE AND OFF-STATE BLOCKING VOLTAGE**

- Tj = 0 to 110°C
- VDRM
- VRM

**MODEL**

- SDT123RT: 9000, 9000
- SDT123RK: 8500, 8500
- SDT123PT: 7000, 8000
- SDT123PK: 7500, 7500

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175 GREAT VALLEY PKWY. MALVERN, PA 19355 USA

9/13/95
**FULL CYCLE AVERAGE POWER LOSS**

versus

PEAK CURRENT at 50/60 Hz

(plasma spreading and conduction loss)

---

**MAXIMUM PEAK RECOVERY CURRENT**

$T_J = 110 \, ^oC$

6RT123 THYRISTOR

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**GATE SUPPLY REQUIREMENTS**

- Open circuit voltage: 40 V
- Short circuit current: 4 A
  - Rise time: 0.5 µs
- Pulse duration (min): 20 µs

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**Full Cycle Power Loss (watts)**

50/60 Hz, $T_J=110^oC$

<table>
<thead>
<tr>
<th>$I_p$ (peak) (A)</th>
<th>Half-sine 180°</th>
<th>3 Phase 120°</th>
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<tbody>
<tr>
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<tr>
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