

Current Regulator Diodes— $P_{OV(min)}$ 45 V

SST502

SST504

SST506

SST508

SST510

SST503

SST505

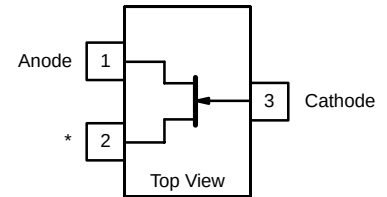
SST507

SST509

SST511

PRODUCT SUMMARY

Part Number	Typ I_F (mA)	Marking	Part Number	Typ I_F (mA)	Marking
SST502	0.43	L2	SST507	1.80	L7
SST503	0.56	L3	SST508	2.40	L8
SST504	0.75	L4	SST509	3.00	L9
SST505	1.00	L5	SST510	3.60	L0
SST506	1.40	L6	SST511	4.70	L1

TO-236
(SOT-23)

*Short lead #2 to Cathode (lead #3) via circuit board trace.

FEATURES

- Surface-Mount Package
- Guaranteed $\pm 20\%$ Tolerance
- Operation from 1 V (SST502, 3) to 45 V
- Good Temperature Stability

BENEFITS

- Simple Series Circuitry, No Separate Voltage Source
- Tight Guaranteed Circuit Performance
- Excellent Performance in Low-Voltage/Battery Circuits and High-Voltage Spike Protection
- High Circuit Stability vs. Temperature

APPLICATIONS

- Constant-Current Supply
- Current-Limiting
- Timing Circuits

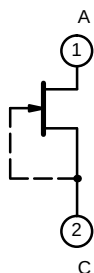
DESCRIPTION

The SST502 series is a family of $\pm 20\%$ range current regulators designed for demanding applications in test equipment and instrumentation. These devices utilize the JFET techniques to produce a device which is extremely simple to operate.

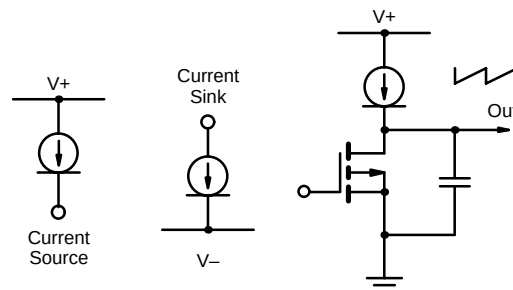
With nominal current ranges from 0.43 mA to 4.7 mA, the SST502 series will meet a wide array of design requirements.

The low-cost TO-236 surface-mount package ensures a cost-effective design solution.

SCHEMATIC DIAGRAM



APPLICATIONS



Linear Ramp Generator

**ABSOLUTE MAXIMUM RATINGS**

Peak Operating Voltage 45 V

Reverse Current 50 mA

Storage Temperature -55 to 150°C

Power Dissipation^a 350 mW

Notes:

a. Derate 2.8 mW/°C above 25°C

SPECIFICATIONS (T_A = 25°C) UNLESS OTHERWISE NOTED

Parameter	Symbol	Test Conditions	Limits			Unit
			Min	Typ ^a	Max	
Peak Operating Voltage ^b	P _{OV}	I _F = 1.1 I _{F(max)}	45	55		V
Reverse Voltage	V _R	I _R = 1 mA		0.8		
Capacitance	C _F	V _F = 25 V, f = 1 MHz		1.5		pF

	Regulator Current ^c (I _F)			Dynamic Impedance ^d (Z _d)		Knee Impedance (Z _k)	Limiting Voltage ^e (V _L)		Temperature Coefficient (θ ₁)
	V _F = 25 V			V _F = 25 V		V _F = 6 V	I _F = 0.8 I _{F(min)}		V _F = 25 V 0°C ≤ T _A ≤ 100°C
Part Number	mA			MΩ		MΩ	V		%/°C
	Min	Nom	Max	Min	Typ ^a	Typ ^a	Max	Typ ^a	Typ ^a
SST502	0.344	0.43	0.516	1.0	2.7	0.7	1.5	0.6	-0.08
SST503	0.448	0.56	0.672	0.7	2.0	0.5	1.7	0.7	-0.12
SST504	0.600	0.75	0.900	0.5	1.5	0.4	1.9	0.8	-0.16
SST505	0.800	1.00	1.200	0.4	1.0	0.3	2.1	0.9	-0.20
SST506	1.120	1.40	1.680	0.3	0.8	0.2	2.5	1.1	-0.24
SST507	1.440	1.80	2.160	0.2	0.6	0.12	2.8	1.3	-0.28
SST508	1.900	2.40	2.900	0.1	0.4	0.08	3.1	1.5	-0.31
SST509	2.400	3.00	3.600	0.09	0.3	0.06	3.5	1.7	-0.34
SST510	2.900	3.60	4.300	0.08	0.3	0.04	3.9	1.9	-0.37
SST511	3.800	4.70	5.600	0.07	0.2	0.03	4.2	2.1	-0.40

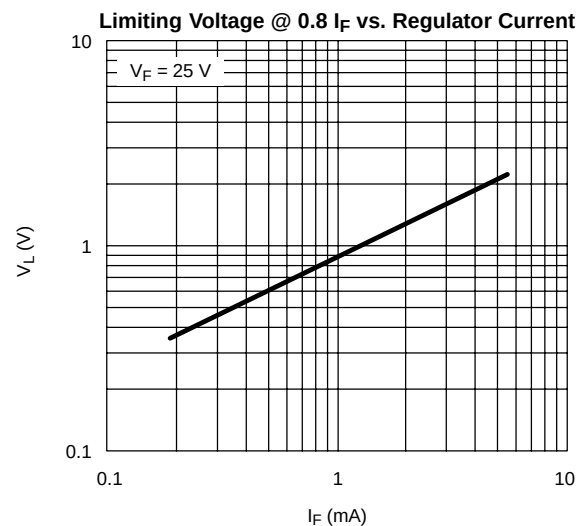
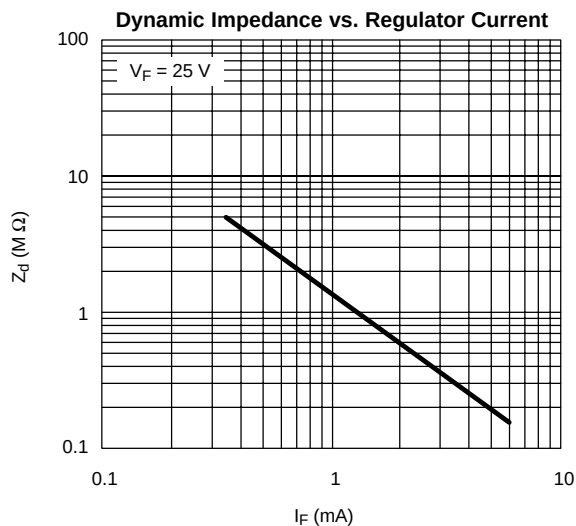
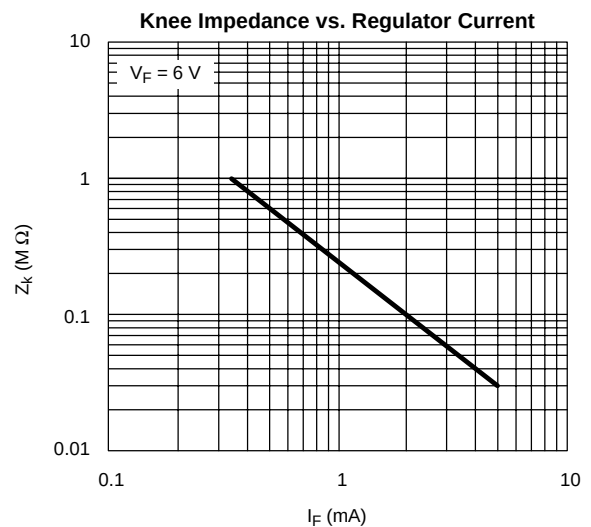
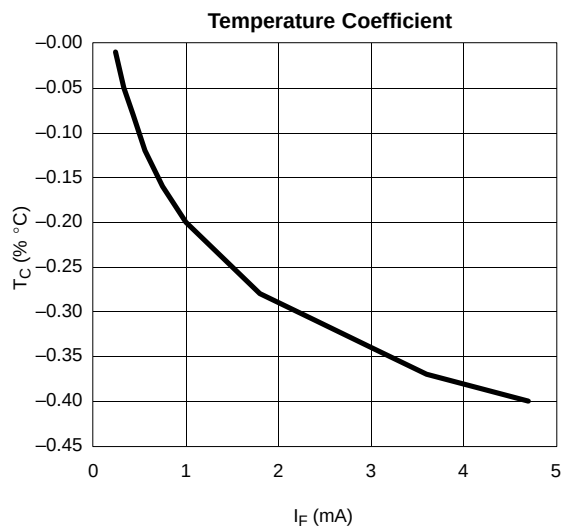
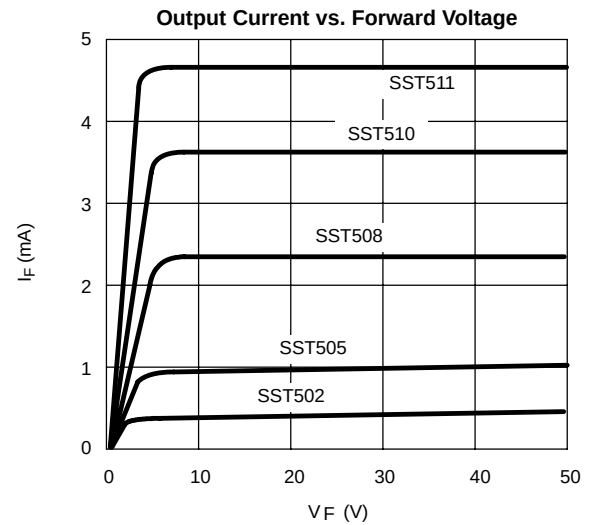
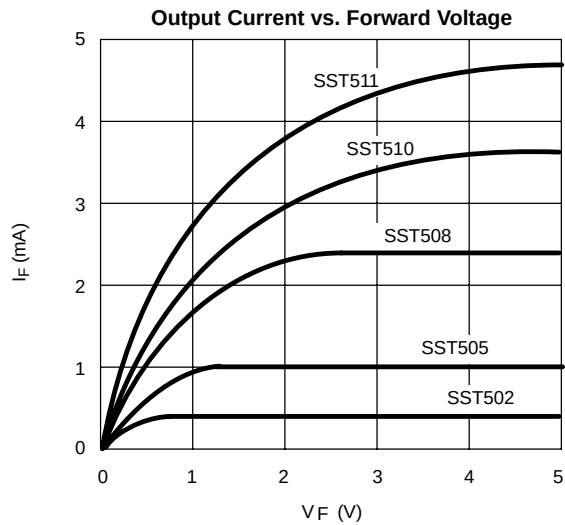
Notes:

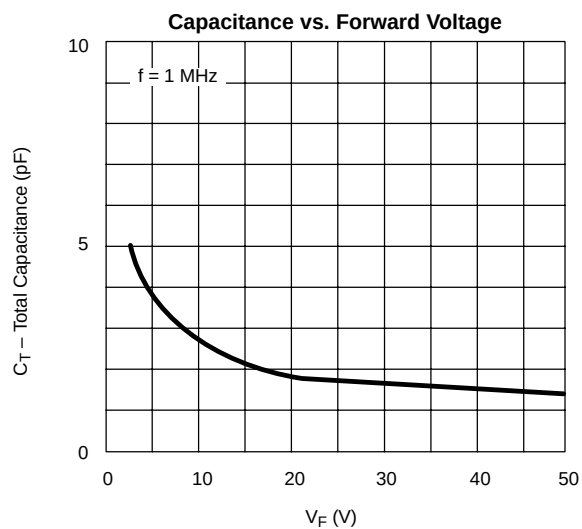
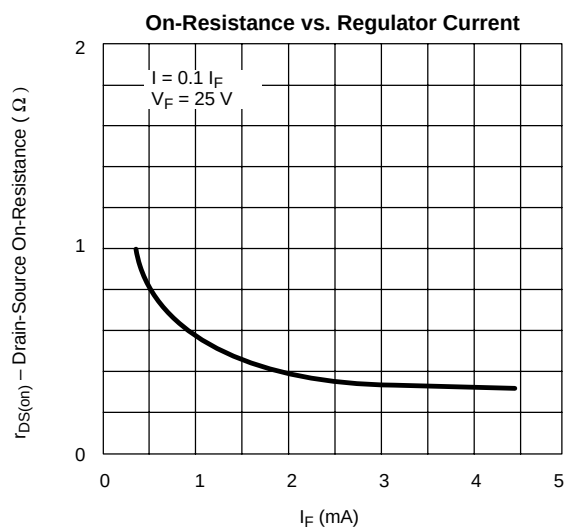
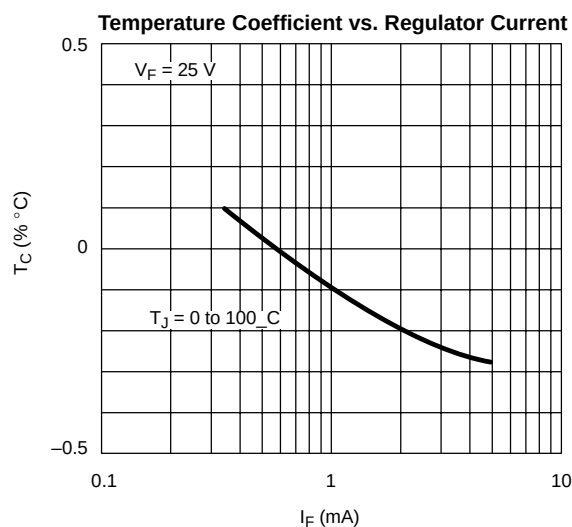
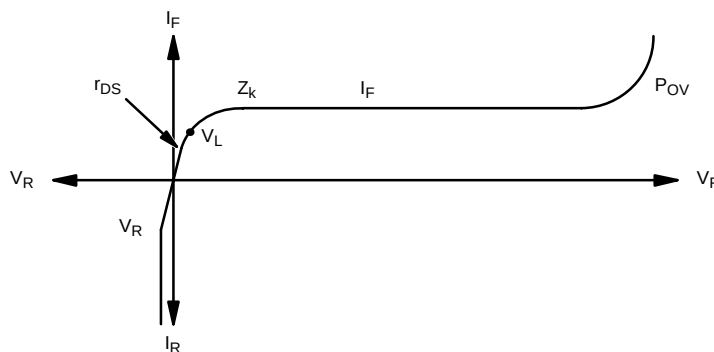
- a. Typical values are for DESIGN AID ONLY, not guaranteed nor subject to production testing.
 b. Max V_F where I_F = 1.1 I_{F(max)} is guaranteed.
 c. Pulse test—steady state currents may vary.
 d. Pulse test—steady state impedances may vary.
 e. Min V_F required to insure I_F = 0.8 I_{F(min)}.

NPA



TYPICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)



TYPICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)

CURRENT REGULATOR DIODE V-1 CHARACTERISTIC




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