



Solid State Devices, Inc.

14701 Firestone Blvd * La Mirada, Ca 90638
 Phone: (562) 404-4474 * Fax: (562) 404-1773
 ssdi@ssdi-power.com * www.ssdi-power.com

DESIGNER'S DATA SHEET

Part Number / Ordering Information ^{1/}

ST15K S M B

Screening^{2/}
 — = Not Screened
 TX = TX Level
 TXV = TXV Level
 S = S Level

Tolerance: B = 5%

Lead Bend Options:
 — = Straight Leads
 DB = Down bend
 UB = Up Bend

Package: M = TO-254

Standoff Voltage: 12 – 110 = 12 - 110 V

Configuration: S = Unidirectional

Power 10K = 10kW 15K = 15 kW

ST10KS12MB – ST15KS110MB

10 - 15 kW
Unidirectional
Transient Voltage Suppressor
12 - 110 VOLTS

FEATURES:

- High Peak Pulse Power Dissipation
- Hermetically Sealed Package
- High Surge Rating
- TX, TXV, S-Level Screening Available

APPLICATIONS:

- Protection of Voltage Sensitive Components
- Protection Against Power Interruption
- Lightning Protection

Maximum Ratings ^{3/}	Symbol	Value	Unit
Peak Pulse Power Dissipation T _L = 25°C, 10/1000 µs waveform (see Fig 1)	ST10K ST15K P_{PPM}	10,000 15,000	W
Steady State Power Dissipation T _L = 25°C	P_D	4	W
Peak Forward Surge Current 8.3 ms single half sine wave	I_{FSM}	500	A
Operating Temperature	T_{op}	-65 to +125	°C
Storage Temperature	T_{stg}	-65 to +150	°C
Maximum Forward Voltage Drop I _F = 100 A	V_F	3.5	V
Thermal Resistance Junction to Lead, ¼"	R_{θJL}	25	°C/W

NOTES: *Pulsed per MIL-STD-750.

^{1/} For ordering information, price, operating curves, and availability – contact factory.

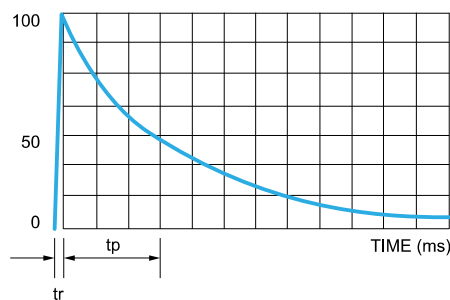
^{2/} Screening based on MIL-PRF-19500. Screening flows available on request.

^{3/} T_A = 25°C unless otherwise noted.

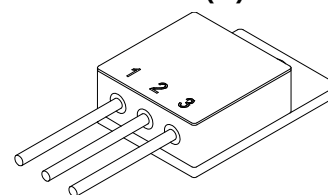
^{4/} All voltages are measured with an automated test set using a 35 msec test time. Longer or shorter test times will have a corresponding effect on the measured value due to heating effects.

^{5/} Guaranteed by design, not tested in production

Figure 1 - Exponential 10 / 1000 µs Waveform



TO-254 (M)



NOTE: All specifications are subject to change without notification.
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DOCX



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ST10KS12MB – ST15KS110MB

Electrical Characteristics^{3/}

Part Number	Breakdown Voltage ^{4/} @ I _T		Test Current I _T	Clamping Voltage (10 / 1000 μs)		Clamping Voltage ^{5/} (8 / 20 μs)		Maximum Reverse Current @ Standoff Voltage		Maximum Temperature Coefficient of V _{BR} T _C
	V _{BR} (min)	V _{BR} (max)		V _C Max	@ I _{PP}	V _C Max	@ I _{PP}	I _R	V _R	
	V	V		V	A	V	A	μA	V	
ST10KS12MB	13.3	14.7	20	19.9	502.5	25.7	3780.0	1200	12	0.075
ST15KS12MB					753.8		4900.7			
ST10KS13MB	14.4	15.9	20	21.5	465.1	27.8	3495.0	800	13	0.076
ST15KS13MB					697.7		4535.1			
ST10KS14MB	15.6	17.2	20	23.2	431.0	30.0	3240.0	300	14	0.080
ST15KS14MB					646.6		4203.6			
ST10KS15MB	16.7	18.5	2	24.4	409.8	31.5	3075.0	150	15	0.083
ST15KS15MB					614.8		3996.4			
ST10KS16MB	17.8	19.7	2	26.0	384.6	33.6	2895.0	80	16	0.084
ST15KS16MB					576.9		3750.2			
ST10KS17MB	18.9	20.9	2	27.6	362.3	35.7	2715.0	30	17	0.085
ST15KS17MB					543.5		3534.4			
ST10KS18MB	20.0	22.1	2	29.2	342.5	37.7	2580.0	15	18	0.088
ST15KS18MB					513.7		3339.4			
ST10KS20MB	22.2	24.5	2	32.4	308.6	41.9	2312.0	8	20	0.091
ST15KS20MB					463.0		3010.3			
ST10KS22MB	24.4	26.9	2	35.5	281.7	45.9	2115.0	8	22	0.092
ST15KS22MB					422.5		2746.5			
ST10KS24MB	26.7	29.5	2	38.9	257.1	50.3	1935.0	8	24	0.092
ST15KS24MB					385.6		2506.5			
ST10KS26MB	28.9	31.9	2	42.1	237.5	54.4	1785.0	8	26	0.093
ST15KS26MB					356.3		2316.9			
ST10KS28MB	31.1	34.4	2	45.4	220.3	58.7	1650.0	8	28	0.094
ST15KS28MB					330.4		2147.6			
ST10KS30MB	33.3	36.8	2	48.4	206.6	62.5	1545.0	8	30	0.096
ST15KS30MB					309.9		2014.7			
ST10KS33MB	36.7	40.6	2	53.3	187.6	68.9	1408.6	8	33	0.097
ST15KS33MB					281.4		1829.4			
ST10KS36MB	40.0	44.2	2	58.1	172.1	75.1	1291.6	8	36	0.098
ST15KS36MB					258.2		1679.4			
ST10KS40MB	44.4	49.1	2	64.5	155.0	83.3	1164.0	8	40	0.099
ST15KS40MB					232.6		1512.6			

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ST10KS12MB – ST15KS110MB

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Part Number	Breakdown Voltage ^{4/} @ I _T		Test Current	Clamping Voltage (10 / 1000 μs)		Clamping Voltage ^{5/} (8 / 20 μs)		Maximum Reverse Current @ Standoff Voltage		Maximum Temperature Coefficient of V _{BR}
	V _{BR} (min)	V _{BR} (max)	I _T	V _C Max	@ I _{PP}	V _C Max	@ I _{PP}	I _R	V _R	T _C
	V	V	mA	V	A	V	A	μA	V	%/°C
ST10KS43MB	47.8	52.8	2	69.4	144.1	89.7	1081.6	8	43	0.100
ST15KS43MB					216.1		1405.3			
ST10KS45MB	50.0	55.3	2	72.7	137.6	93.9	1032.0	8	45	0.101
ST15KS45MB					206.3		1341.9			
ST10KS48MB	53.3	58.9	2	77.4	129.2	100.0	970.6	8	48	0.101
ST15KS48MB					193.8		1259.6			
ST10KS51MB	56.7	62.7	2	82.4	121.4	106.5	910.6	8	51	0.101
ST15KS51MB					182.0		1183.5			
ST10KS54MB	60.0	66.3	2	87.1	114.8	112.5	862.6	8	54	0.102
ST15KS54MB					172.2		1121.3			
ST10KS58MB	64.4	71.2	2	93.6	106.8	120.9	802.6	8	58	0.103
ST15KS58MB					160.3		1042.1			
ST10KS60MB	66.7	73.7	2	96.8	103.3	125.1	775.6	8	60	0.103
ST15KS60MB					155.0		1007.3			
ST10KS64MB	71.1	78.6	2	103.0	97.1	133.1	729.0	8	64	0.104
ST15KS64MB					145.6		946.7			
ST10KS70MB	77.8	86.0	2	113.0	88.5	146.0	664.6	8	70	0.105
ST15KS70MB					132.7		865.3			
ST10KS75MB	83.3	92.1	2	121.0	82.6	156.3	621.0	8	75	0.106
ST15KS75MB					124.0		806.8			
ST10KS78MB	86.7	95.8	2	126.0	79.4	162.8	595.6	8	78	0.106
ST15KS78MB					119.0		774.0			
ST10KS85MB	94.4	104.0	2	137.0	73.0	177.0	547.6	8	85	0.106
ST15KS85MB					109.5		711.8			
ST10KS90MB	100.0	111.0	2	146.0	68.5	188.6	514.6	8	90	0.107
ST15KS90MB					102.7		670.3			
ST10KS100MB	111.0	123.0	2	162.0	61.7	209.3	463.6	8	100	0.107
ST15KS100MB					92.6		602.1			
ST10KS110MB	122.0	135.0	2	177.0	56.5	228.7	424.6	8	110	0.107
ST15KS110MB					84.7		550.9			

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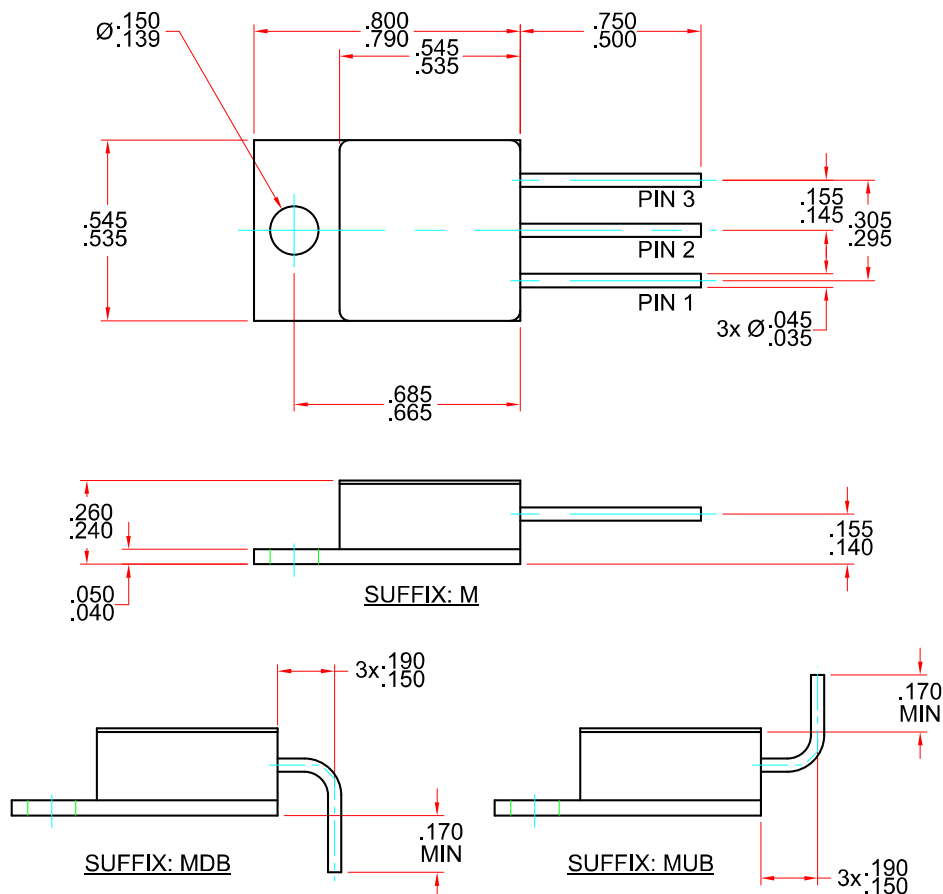
CASE OUTLINE: TO-254 (M)

Pin Assignment

Pin 1 – Anode

Pin 2 – N/C

Pin 3 – Cathode



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