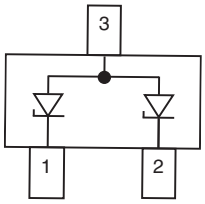
Features

- Two-line ESD protection device
- ESD immunity acc. IEC 61000-4-2
  ± 30 kV contact discharge
  ± 30 kV air discharge
- ESD capability according to AEC-Q101:
  human body model: class H3B: > 8 kV
- Space saving SOT-23 package
- AEC-Q101 qualified available



ABSOLUTE MAXIMUM RATINGS GSOT03C

PARAMETER	TEST CONDITIONS	SYMBOL	VALUE	UNIT
Peak pulse current	Pin 1 to 3 or pin 2 to 3 acc. IEC 61000-4-5, t_p = 8/20 µs; single shot	I_{PPM}	30	A
	Pin 1 to 2 or pin 2 to 1; pin 3 not connected acc. IEC 61000-4-5, t_p = 8/20 µs; single shot		30	A
Peak pulse power	Pin 1 to 3 or pin 2 to 3 acc. IEC 61000-4-5, t_p = 8/20 µs; single shot	P_{PP}	369	W
	Pin 1 to 2 or pin 2 to 1; pin 3 not connected acc. IEC 61000-4-5, t_p = 8/20 µs; single shot		504	W
ESD immunity	Contact discharge acc. IEC 61000-4-2; 10 pulses	V_{ESD}	± 30	kV
	Air discharge acc. IEC 61000-4-2; 10 pulses		± 30	kV
Operating temperature	Junction temperature	T_J	-55 to +150	°C
Storage temperature		T_{STG}	-55 to +150	°C

ABSOLUTE MAXIMUM RATINGS GSOT04C

PARAMETER	TEST CONDITIONS	SYMBOL	VALUE	UNIT
Peak pulse current	Pin 1 to 3 or pin 2 to 3 acc. IEC 61000-4-5, t_p = 8/20 µs; single shot	I_{PPM}	30	A
	Pin 1 to 2 or pin 2 to 1; pin 3 not connected acc. IEC 61000-4-5, t_p = 8/20 µs; single shot		30	A
Peak pulse power	Pin 1 to 3 or pin 2 to 3 acc. IEC 61000-4-5, t_p = 8/20 µs; single shot	P_{PP}	429	W
	Pin 1 to 2 or pin 2 to 1; pin 3 not connected acc. IEC 61000-4-5, t_p = 8/20 µs; single shot		564	W
ESD immunity	Contact discharge acc. IEC 61000-4-2; 10 pulses	V_{ESD}	± 30	kV
	Air discharge acc. IEC 61000-4-2; 10 pulses		± 30	kV
Operating temperature	Junction temperature	T_J	-55 to +150	°C
Storage temperature		T_{STG}	-55 to +150	°C

ABSOLUTE MAXIMUM RATINGS GSOT05C

PARAMETER	TEST CONDITIONS	SYMBOL	VALUE	UNIT
Peak pulse current	Pin 1 to 3 or pin 2 to 3 acc. IEC 61000-4-5, t_p = 8/20 µs; single shot	I_{PPM}	30	A
	Pin 1 to 2 or pin 2 to 1; pin 3 not connected acc. IEC 61000-4-5, t_p = 8/20 µs; single shot		30	A
Peak pulse power	Pin 1 to 3 or pin 2 to 3 acc. IEC 61000-4-5, t_p = 8/20 µs; single shot	P_{PP}	480	W
	Pin 1 to 2 or pin 2 to 1; pin 3 not connected acc. IEC 61000-4-5, t_p = 8/20 µs; single shot		612	W
ESD immunity	Contact discharge acc. IEC 61000-4-2; 10 pulses	V_{ESD}	± 30	kV
	Air discharge acc. IEC 61000-4-2; 10 pulses		± 30	kV
Operating temperature	Junction temperature	T_J	-55 to +150	°C
Storage temperature		T_{STG}	-55 to +150	°C

ABSOLUTE MAXIMUM RATINGS GSOT08C

PARAMETER	TEST CONDITIONS	SYMBOL	VALUE	UNIT
Peak pulse current	Pin 1 to 3 or pin 2 to 3 acc. IEC 61000-4-5, t_p = 8/20 µs; single shot	I_{PPM}	18	A
	Pin 1 to 2 or pin 2 to 1; pin 3 not connected acc. IEC 61000-4-5, t_p = 8/20 µs; single shot		18	A
Peak pulse power	Pin 1 to 3 or pin 2 to 3 acc. IEC 61000-4-5, t_p = 8/20 µs; single shot	P_{PP}	345	W
	Pin 1 to 2 or pin 2 to 1; pin 3 not connected acc. IEC 61000-4-5, t_p = 8/20 µs; single shot		400	W
ESD immunity	Contact discharge acc. IEC 61000-4-2; 10 pulses	V_{ESD}	± 30	kV
	Air discharge acc. IEC 61000-4-2; 10 pulses		± 30	kV
Operating temperature	Junction temperature	T_J	-55 to +150	°C
Storage temperature		T_{STG}	-55 to +150	°C

ABSOLUTE MAXIMUM RATINGS GSOT12C

PARAMETER	TEST CONDITIONS	SYMBOL	VALUE	UNIT
Peak pulse current	Pin 1 to 3 or pin 2 to 3 acc. IEC 61000-4-5, t_p = 8/20 µs; single shot	I_{PPM}	12	A
	Pin 1 to 2 or pin 2 to 1; pin 3 not connected acc. IEC 61000-4-5, t_p = 8/20 µs; single shot		12	A
Peak pulse power	Pin 1 to 3 or pin 2 to 3 acc. IEC 61000-4-5, t_p = 8/20 µs; single shot	P_{PP}	312	W
	Pin 1 to 2 or pin 2 to 1; pin 3 not connected acc. IEC 61000-4-5, t_p = 8/20 µs; single shot		337	W
ESD immunity	Contact discharge acc. IEC 61000-4-2; 10 pulses	V_{ESD}	± 30	kV
	Air discharge acc. IEC 61000-4-2; 10 pulses		± 30	kV
Operating temperature	Junction temperature	T_J	-55 to +150	°C
Storage temperature		T_{STG}	-55 to +150	°C

ABSOLUTE MAXIMUM RATINGS GSOT15C

PARAMETER	TEST CONDITIONS	SYMBOL	VALUE	UNIT
Peak pulse current	Pin 1 to 3 or pin 2 to 3 acc. IEC 61000-4-5, t_p = 8/20 µs; single shot	I_{PPM}	8	A
	Pin 1 to 2 or pin 2 to 1; pin 3 not connected acc. IEC 61000-4-5, t_p = 8/20 µs; single shot		8	A
Peak pulse power	Pin 1 to 3 or pin 2 to 3 acc. IEC 61000-4-5, t_p = 8/20 µs; single shot	P_{PP}	345	W
	Pin 1 to 2 or pin 2 to 1; pin 3 not connected acc. IEC 61000-4-5, t_p = 8/20 µs; single shot		400	W
ESD immunity	Contact discharge acc. IEC 61000-4-2; 10 pulses	V_{ESD}	± 30	kV
	Air discharge acc. IEC 61000-4-2; 10 pulses		± 30	kV
Operating temperature	Junction temperature	T_J	-55 to +150	°C
Storage temperature		T_{STG}	-55 to +150	°C

ABSOLUTE MAXIMUM RATINGS GSOT24C

PARAMETER	TEST CONDITIONS	SYMBOL	VALUE	UNIT
Peak pulse current	Pin 1 to 3 or pin 2 to 3 acc. IEC 61000-4-5, t_p = 8/20 µs; single shot	I_{PPM}	5	A
	Pin 1 to 2 or pin 2 to 1; pin 3 not connected acc. IEC 61000-4-5, t_p = 8/20 µs; single shot		5	A
Peak pulse power	Pin 1 to 3 or pin 2 to 3 acc. IEC 61000-4-5, t_p = 8/20 µs; single shot	P_{PP}	235	W
	Pin 1 to 2 or pin 2 to 1; pin 3 not connected acc. IEC 61000-4-5, t_p = 8/20 µs; single shot		240	W
ESD immunity	Contact discharge acc. IEC 61000-4-2; 10 pulses	V_{ESD}	± 30	kV
	Air discharge acc. IEC 61000-4-2; 10 pulses		± 30	kV
Operating temperature	Junction temperature	T_J	-55 to +150	°C
Storage temperature		T_{STG}	-55 to +150	°C

ABSOLUTE MAXIMUM RATINGS GSOT36C

PARAMETER	TEST CONDITIONS	SYMBOL	VALUE	UNIT
Peak pulse current	Pin 1 to 3 or pin 2 to 3 acc. IEC 61000-4-5, t_p = 8/20 µs; single shot	I_{PPM}	3.5	A
	Pin 1 to 2 or pin 2 to 1; pin 3 not connected acc. IEC 61000-4-5, t_p = 8/20 µs; single shot		3.5	A
Peak pulse power	Pin 1 to 3 or pin 2 to 3 acc. IEC 61000-4-5, t_p = 8/20 µs; single shot	P_{PP}	248	W
	Pin 1 to 2 or pin 2 to 1; pin 3 not connected acc. IEC 61000-4-5, t_p = 8/20 µs; single shot		252	W
ESD immunity	Contact discharge acc. IEC 61000-4-2; 10 pulses	V_{ESD}	± 30	kV
	Air discharge acc. IEC 61000-4-2; 10 pulses		± 30	kV
Operating temperature	Junction temperature	T_J	-55 to +150	°C
Storage temperature		T_{STG}	-55 to +150	°C

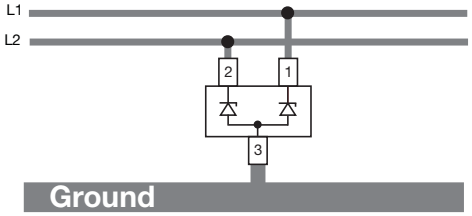
BiAs-MODE (2-line Bidirectional Asymmetrical protection mode)

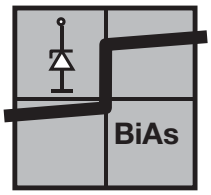
With the GSOTxxC two signal- or data-lines (L1, L2) can be protected against voltage transients. With pin 3 connected to ground and pin 1 and pin 2 connected to a signal- or data-line which has to be protected. As long as the voltage level on the data- or signal-line is between 0 V (ground level) and the specified Maximum Reverse Working Voltage (V_{RWM}) the protection diode between pin 2 and pin 3 and between pin 1 and pin 3 offers a high isolation to the ground line. The protection device behaves like an open switch.

As soon as any positive transient voltage signal exceeds the breakdown voltage level of the protection diode, the diode becomes conductive and shorts the transient current to ground. Now the protection device behaves like a closed switch. The Clamping Voltage (V_C) is defined by the breakdown voltage (V_{BR}) level plus the voltage drop at the series impedance (resistance and inductance) of the protection diode.

Any negative transient signal will be clamped accordingly. The negative transient current is flowing in the forward direction through the protection diode. The low Forward Voltage (V_F) clamps the negative transient close to the ground level.

Due to the different clamping levels in forward and reverse direction the GSOTxxC clamping behavior is Bidirectional and Asymmetrical (BiAs).





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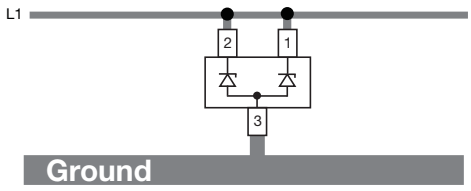
If a higher surge current or peak pulse current (I_{PP}) is needed, both protection diodes in the GSOTxxC can also be used in parallel in order to “double” the performance.

This offers:

- double surge power = double peak pulse current (2 x I_{PPM})
- half of the line inductance = reduced clamping voltage
- half of the line resistance = reduced clamping voltage
- double line capacitance (2 x C_D)
- double reverse leakage current (2 x I_R)



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ELECTRICAL CHARACTERISTICS GSOT03C (T_{amb} = 25 °C unless otherwise specified)
between pin 1 to pin 3 or pin 2 to pin 3

PARAMETER	TEST CONDITIONS/REMARKS	SYMBOL	MIN.	TYP.	MAX.	UNIT
Protection paths	Number of li nes which can be protected	$N_{channel}$			2	lines
Reverse stand-off voltage	Max. reverse working voltage	V_{RWM}			3.3	V
Reverse voltage	at I_R = 100 µA	V_R	3.3			V
Reverse current	at V_R = 3.3 V	I_R			10	0µA
Reverse breakdown voltage	at I_R = 1 mA	V_{BR}	4.0	4.6	5.5	V
Reverse clamping voltage	at I_{PP} = 1 A	V_C		5.7	7.5	V
	at I_{PP} = I_{PPM} = 30 A			10	12.3	V
Forward clamping voltage	at I_{PP} = 1 A	V_F		1	1.2	V
	at I_{PP} = I_{PPM}= 30 A			4.5		V
Capacitance	at V_R = 0 V; f = 1 MHz	C_D		420	600	pF
	at V_R = 1.6 V; f = 1 MHz			260		pF

ELECTRICAL CHARACTERISTICS GSOT04C (T_{amb} = 25 °C unless otherwise specified)
between pin 1 to pin 3 or pin 2 to pin 3

PARAMETER	TEST CONDITIONS/REMARKS	SYMBOL	MIN.	TYP.	MAX.	UNIT
Protection paths	Number of li nes which can be protected	$N_{channel}$			2	lines
Reverse stand-off voltage	Max. reverse working voltage	V_{RWM}			4	V
Reverse voltage	at I_R = 20 µA	V_R	4			V
Reverse current	at V_R = 4 V	I_R			20	µA
Reverse breakdown voltage	at I_R = 1 mA	V_{BR}	5	6.1	7	V
Reverse clamping voltage	at I_{PP} = 1 A	V_C		7.5	9	V
	at I_{PP} = I_{PPM} = 30 A			11.2	14.3	V
Forward clamping voltage	at I_{PP} = 1 A	V_F		1	1.2	V
	at I_{PP} = I_{PPM} = 30 A			4.5		V
Capacitance	at V_R = 0 V; f = 1 MHz	C_D		310	450	pF
	at V_R = 2 V; f = 1 MHz			200		pF

ELECTRICAL CHARACTERISTICS GSOT05C (T_{amb} = 25 °C unless otherwise specified)
between pin 1 to pin 3 or pin 2 to pin 3

PARAMETER	TEST CONDITIONS/REMARKS	SYMBOL	MIN.	TYP.	MAX.	UNIT
Protection paths	Number of li nes which can be protected	$N_{channel}$			2	lines
Reverse stand-off voltage	Max. reverse working voltage	V_{RWM}			5	V
Reverse voltage	at I_R = 10 µA	V_R	5			V
Reverse current	at V_R = 5 V	I_R			10	µA
Reverse breakdown voltage	at I_R = 1 mA	V_{BR}	6	6.8	8	V
Reverse clamping voltage	at I_{PP} = 1 A	V_C		7	8.7	V
	at I_{PP} = I_{PPM} = 30 A			12	16	V
Forward clamping voltage	at I_{PP} = 1 A	V_F		1	1.2	V
	at I_{PP} = I_{PPM} = 30 A			4.5		V
Capacitance	at V_R = 0 V; f = 1 MHz	C_D		260	350	pF
	at V_R = 2.5 V; f = 1 MHz			150		pF

ELECTRICAL CHARACTERISTICS GSOT08C (T_{amb} = 25 °C unless otherwise specified)
between pin 1 to pin 3 or pin 2 to pin 3

PARAMETER	TEST CONDITIONS/REMARKS	SYMBOL	MIN.	TYP.	MAX.	UNIT
Protection paths	Number of li nes which can be protected	$N_{channel}$			2	lines
Reverse stand-off voltage	Max. reverse working voltage	V_{RWM}			8	V
Reverse voltage	at I_R = 5 µA	V_R	8			V
Reverse current	at V_R = 8 V	I_R			5	µA
Reverse breakdown voltage	at I_R = 1 mA	V_{BR}	9	10	11	V
Reverse clamping voltage	at I_{PP} = 1 A	V_C		10.7	13	V
	at I_{PP} = I_{PPM} = 18 A			15.2	19.2	V
Forward clamping voltage	at I_{PP} = 1 A	V_F		1	1.2	V
	at I_{PP} = I_{PPM} = 18 A			3		V
Capacitance	at V_R = 0 V; f = 1 MHz	C_D		160	250	pF
	at V_R = 4 V; f = 1 MHz			80		pF

ELECTRICAL CHARACTERISTICS GSOT12C (T_{amb} = 25 °C unless otherwise specified)
between pin 1 to pin 3 or pin 2 to pin 3

PARAMETER	TEST CONDITIONS/REMARKS	SYMBOL	MIN.	TYP.	MAX.	UNIT
Protection paths	Number of li nes which can be protected	$N_{channel}$			2	lines
Reverse stand-off voltage	Max. reverse working voltage	V_{RWM}			12	V
Reverse voltage	at I_R = 1 µA	V_R	12			V
Reverse current	at V_R = 12 V	I_R			1	µA
Reverse breakdown voltage	at I_R = 1 mA	V_{BR}	13.5	15	16.5	V
Reverse clamping voltage	at I_{PP} = 1 A	V_C		15.4	18.7	V
	at I_{PP} = I_{PPM} = 12 A			21.2	26	V
Forward clamping voltage	at I_{PP} = 1 A	V_F		1	1.2	V
	at I_{PP} = I_{PPM} = 12 A			2.2		V
Capacitance	at V_R = 0 V; f = 1 MHz	C_D		115	150	pF
	at V_R = 6 V; f = 1 MHz			50		pF

ELECTRICAL CHARACTERISTICS GSOT15C (T_{amb} = 25 °C unless otherwise specified)
between pin 1 to pin 3 or pin 2 to pin 3

PARAMETER	TEST CONDITIONS/REMARKS	SYMBOL	MIN.	TYP.	MAX.	UNIT
Protection paths	Number of li nes which can be protected	$N_{channel}$			2	lines
Reverse stand-off voltage	Max. reverse working voltage	V_{RWM}			15	V
Reverse voltage	at I_R = 1 µA	V_R	15			V
Reverse current	at V_R = 15 V	I_R		1		µA
Reverse breakdown voltage	at I_R = 1 mA	V_{BR}	16.5	18	20	V
Reverse clamping voltage	at I_{PP} = 1 A	V_C		19.4	23.5	V
	at I_{PP} = I_{PPM} = 8 A			24.8	28.8	V
Forward clamping voltage	at I_{PP} = 1 A	V_F		1	1.2	V
	at I_{PP} = I_{PPM} = 8 A			1.8		V
Capacitance	at V_R = 0 V; f = 1 MHz	C_D		90	120	pF
	at V_R = 7.5 V; f = 1 MHz			35		pF

ELECTRICAL CHARACTERISTICS GSOT24C (T_{amb} = 25 °C unless otherwise specified)
between pin 1 to pin 3 or pin 2 to pin 3

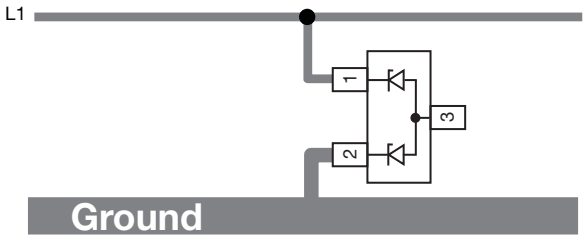
PARAMETER	TEST CONDITIONS/REMARKS	SYMBOL	MIN.	TYP.	MAX.	UNIT
Protection paths	Number of li nes which can be protected	$N_{channel}$			2	lines
Reverse stand-off voltage	Max. reverse working voltage	V_{RWM}			24	V
Reverse voltage	at I_R = 1 µA	V_R	24			V
Reverse current	at V_R = 24 V	I_R			1	µA
Reverse breakdown voltage	at I_R = 1 mA	V_{BR}	27	30	33	V
Reverse clamping voltage	at I_{PP} = 1 A	V_C		34	41	V
	at I_{PP} = I_{PPM} = 5 A			41	47	V
Forward clamping voltage	at I_{PP} = 1 A	V_F		1	1.2	V
	at I_{PP} = I_{PPM} = 5 A			1.4		V
Capacitance	at V_R = 0 V; f = 1 MHz	C_D		65	80	pF
	at V_R = 12 V; f = 1 MHz			20		pF

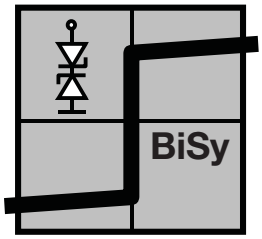
ELECTRICAL CHARACTERISTICS GSOT36C (T_{amb} = 25 °C unless otherwise specified)
between pin 1 to pin 3 or pin 2 to pin 3

PARAMETER	TEST CONDITIONS/REMARKS	SYMBOL	MIN.	TYP.	MAX.	UNIT
Protection paths	Number of li nes which can be protected	$N_{channel}$			2	lines
Reverse stand-off voltage	Max. reverse working voltage	V_{RWM}			36	V
Reverse voltage	at I_R = 1 µA	V_R	36			V
Reverse current	at V_R = 36 V	I_R			1	µA
Reverse breakdown voltage	at I_R = 1 mA	V_{BR}	39	43	47	V
Reverse clamping voltage	at I_{PP} = 1 A	V_C		49	60	V
	at I_{PP} = I_{PPM} = 3.5 A			59	71	V
Forward clamping voltage	at I_{PP} = 1 A	V_F		1	1.2	V
	at I_{PP} = I_{PPM} = 3.5 A			1.3		V
Capacitance	at V_R = 0 V; f = 1 MHz	C_D		52	65	pF
	at V_R = 18 V; f = 1 MHz			12		pF

BiSy-MODE (1-line bidirectional symmetrical protection mode)

If a bipolar symmetrical protection device is needed the GSOTxxC can also be used as a single line protection device. Therefore pin 1 has to be connected to the signal- or data-line (L1) and pin 2 to ground (or vice versa). Pin 3 must not be connected. Positive and negative voltage transients will be clamped in the same way. The clamping current through the GSOTxxC passes one diode in forward direction and the other one in reverse direction. The clamping voltage (V_C) is defined by the breakthrough voltage (V_{BR}) level of one diode plus the forward voltage of the other diode plus the voltage drop at the series impedances (resistances and inductances) of the protection device.
Due to the same clamping levels in positive and negative direction the GSOTxxC voltage clamping behaviour is bidirectional and symmetrical (BiSy).





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ELECTRICAL CHARACTERISTICS GSOT03C (T_{amb} = 25 °C unless otherwise specified)
between pin 1 to pin 2 or pin 2 to pin1; pin 3 not connected

PARAMETER	TEST CONDITIONS/REMARKS	SYMBOL	MIN.	TYP.	MAX.	UNIT
Protection paths	Number of li nes which can be protected	$N_{channel}$			1	lines
Reverse stand-off voltage	Max. reverse working voltage	V_{RWM}			3.8	V
Reverse voltage	at I_R = 100 µA	V_R	3.8			V
Reverse current	at V_R = 3.8 V	I_R			100	µA
Reverse breakdown voltage	at I_R = 1 mA	V_{BR}	4.5	5.3	6.2	V
Reverse clamping voltage	at I_{PP} = 1 A	V_C		7	8.4	V
	at I_{PP} = I_{PPM} = 30 A			14	16.8	V
Capacitance	at V_R = 0 V; f = 1 MHz	C_D		210	300	pF
	at V_R = 1.6 V; f = 1 MHz			190		pF

ELECTRICAL CHARACTERISTICS GSOT04C (T_{amb} = 25 °C unless otherwise specified)
between pin 1 to pin 2 or pin 2 to pin1; pin 3 not connected

PARAMETER	TEST CONDITIONS/REMARKS	SYMBOL	MIN.	TYP.	MAX.	UNIT
Protection paths	Number of li nes which can be protected	$N_{channel}$			1	lines
Reverse stand-off voltage	Max. reverse working voltage	V_{RWM}			4.5	V
Reverse voltage	at I_R = 20 µA	V_R	4.5			V
Reverse current	at V_R = 4.5 V	I_R			20	µA
Reverse breakdown voltage	at I_R = 1 mA	V_{BR}	5.5	6.8	7.7	V
Reverse clamping voltage	at I_{PP} = 1 A	V_C		7.5	9	V
	at I_{PP} = I_{PPM} = 30 A			15.7	18.8	V
Capacitance	at V_R = 0 V; f = 1 MHz	C_D		155	225	pF
	at V_R = 2 V; f = 1 MHz			135		pF

ELECTRICAL CHARACTERISTICS GSOT05C (T_{amb} = 25 °C unless otherwise specified)
between pin 1 to pin 2 or pin 2 to pin1; pin 3 not connected

PARAMETER	TEST CONDITIONS/REMARKS	SYMBOL	MIN.	TYP.	MAX.	UNIT
Protection paths	Number of li nes which can be protected	$N_{channel}$			1	lines
Reverse stand-off voltage	Max. reverse working voltage	V_{RWM}			5.5	V
Reverse voltage	at I_R = 10 µA	V_R	5.5			V
Reverse current	at V_R = 5.5 V	I_R			10	µA
Reverse breakdown voltage	at I_R = 1 mA	V_{BR}	6.5	7.5	8.7	V
Reverse clamping voltage	at I_{PP} = 1 A	V_C		8.1	9.7	V
	at I_{PP} = I_{PPM} = 30 A			17	20.4	V
Capacitance	at V_R = 0 V; f = 1 MHz	C_D		130	175	pF
	at V_R = 4 V; f = 1 MHz			100		pF

ELECTRICAL CHARACTERISTICS GSOT08C (T_{amb} = 25 °C unless otherwise specified)
between pin 1 to pin 2 or pin 2 to pin1; pin 3 not connected

PARAMETER	TEST CONDITIONS/REMARKS	SYMBOL	MIN.	TYP.	MAX.	UNIT
Protection paths	Number of li nes which can be protected	$N_{channel}$			1	lines
Reverse stand-off voltage	Max. reverse working voltage	V_{RWM}			8.5	V
Reverse voltage	at I_R = 5 µA	V_R	8.5			V
Reverse current	at V_R = 8.5 V	I_R			5	µA
Reverse breakdown voltage	at I_R = 1 mA	V_{BR}	9.5	10.7	11.7	V
Reverse clamping voltage	at I_{PP} = 1 A	V_C		11.7	14	V
	at I_{PP} = I_{PPM} = 18 A			18.5	22.2	V
Capacitance	at V_R = 0 V; f = 1 MHz	C_D		80	125	pF
	at V_R = 4 V; f = 1 MHz			60		pF

ELECTRICAL CHARACTERISTICS GSOT12C (T_{amb} = 25 °C unless otherwise specified)
between pin 1 to pin 2 or pin 2 to pin1; pin 3 not connected

PARAMETER	TEST CONDITIONS/REMARKS	SYMBOL	MIN.	TYP.	MAX.	UNIT
Protection paths	Number of li nes which can be protected	$N_{channel}$			1	lines
Reverse stand-off voltage	Max. reverse working voltage	V_{RWM}			12.5	V
Reverse voltage	at I_R = 1 µA	V_R	12.5			V
Reverse current	at V_R = 12.5 V	I_R			1	µA
Reverse breakdown voltage	at I_R = 1 mA	V_{BR}	13.5	15.7	16.5	V
Reverse clamping voltage	at I_{PP} = 1 A	V_C		16.4	19.7	V
	at I_{PP} = I_{PPM} = 12 A			23.4	28.1	V
Capacitance	at V_R = 0 V; f = 1 MHz	C_D		58	75	pF
	at V_R = 7.5 V; f = 1 MHz			36		pF

ELECTRICAL CHARACTERISTICS GSOT15C (T_{amb} = 25 °C unless otherwise specified)
between pin 1 to pin 2 or pin 2 to pin1; pin 3 not connected

PARAMETER	TEST CONDITIONS/REMARKS	SYMBOL	MIN.	TYP.	MAX.	UNIT
Protection paths	Number of li nes which can be protected	$N_{channel}$			1	lines
Reverse stand-off voltage	Max. reverse working voltage	V_{RWM}			15.5	V
Reverse voltage	at I_R = 1 µA	V_R	15.5			V
Reverse current	at V_R = 15.5 V	I_R			1	µA
Reverse breakdown voltage	at I_R = 1 mA	V_{BR}	17	18.7	20.7	V
Reverse clamping voltage	at I_{PP} = 1 A	V_C		20.4	24.5	V
	at I_{PP} = I_{PPM} = 8 A			26.6	30.6	V
Capacitance	at V_R = 0 V; f = 1 MHz	C_D		45	60	pF
	at V_R = 7.5 V; f = 1 MHz			25		pF

ELECTRICAL CHARACTERISTICS GSOT24C (T_{amb} = 25 °C unless otherwise specified)
between pin 1 to pin 2 or pin 2 to pin1; pin 3 not connected

PARAMETER	TEST CONDITIONS/REMARKS	SYMBOL	MIN.	TYP.	MAX.	UNIT
Protection paths	Number of li nes which can be protected	$N_{channel}$			1	lines
Reverse stand-off voltage	Max. reverse working voltage	V_{RWM}			24.5	V
Reverse voltage	at I_R = 1 µA	V_R	24.5			V
Reverse current	at V_R = 24.5 V	I_R			1	µA
Reverse breakdown voltage	at I_R = 1 mA	V_{BR}	27.5	30.7	33.7	V
Reverse clamping voltage	at I_{PP} = 1 A	V_C		34	41	V
	at I_{PP} = I_{PPM} = 5 A			40	48	V
Capacitance	at V_R = 0 V; f = 1 MHz	C_D		33	40	pF
	at V_R = 12 V; f = 1 MHz			18		pF

ELECTRICAL CHARACTERISTICS GSOT36C (T_{amb} = 25 °C unless otherwise specified)
between pin 1 to pin 2 or pin 2 to pin1; pin 3 not connected

PARAMETER	TEST CONDITIONS/REMARKS	SYMBOL	MIN.	TYP.	MAX.	UNIT
Protection paths	Number of li nes which can be protected	$N_{channel}$			1	lines
Reverse stand-off voltage	Max. reverse working voltage	V_{RWM}			36.5	V
Reverse voltage	at I_R = 1 µA	V_R	36.5			V
Reverse current	at V_R = 36.5 V	I_R			1	µA
Reverse breakdown voltage	at I_R = 1 mA	V_{BR}	39.5	43.7	47.7	V
Reverse clamping voltage	at I_{PP} = 1 A	V_C		50	60	V
	at I_{PP} = I_{PPM} = 3.5 A			60	72	V
Capacitance	at V_R = 0 V; f = 1 MHz	C_D		26	33	pF
	at V_R = 18 V; f = 1 MHz			10		pF

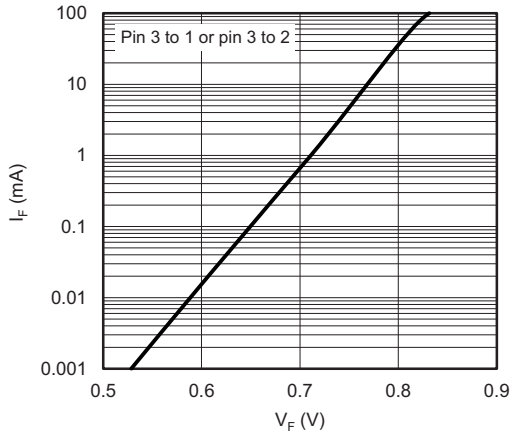


Fig. 1 - Typical Forward Current I_F vs. Forward Voltage V_F

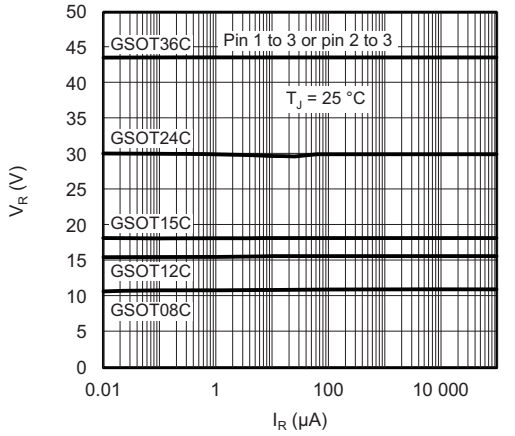


Fig. 2 - Typical Reverse Voltage V_R vs. Reverse Current I_R

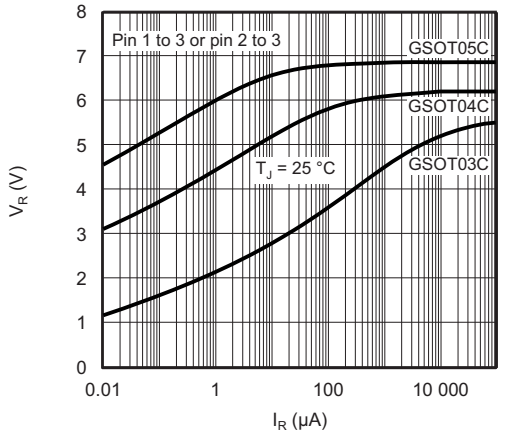


Fig. 3 - Typical Reverse Voltage V_R vs. Reverse Current I_R

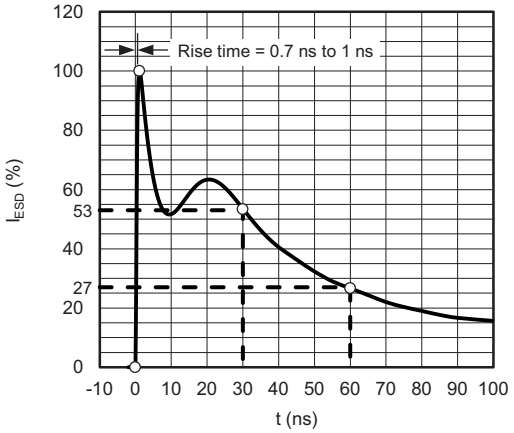


Fig. 4 - ESD Discharge Current Waveform According to IEC 61000-4-2 (330 Ω / 150 pF)

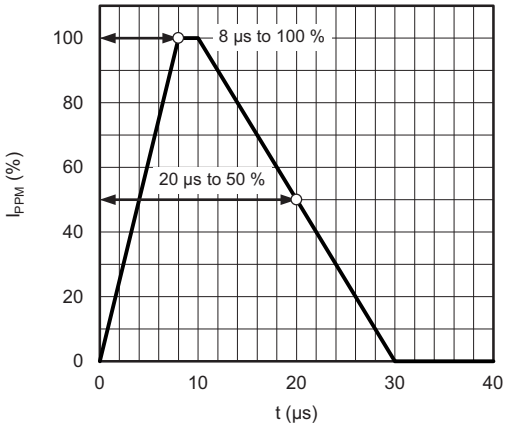


Fig. 5 - 8/20 µs Peak Pulse Current Waveform According to IEC 61000-4-5

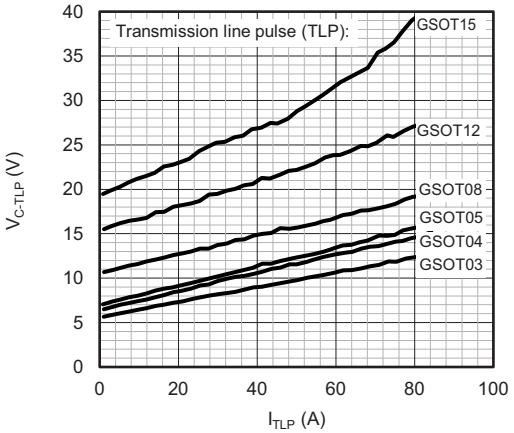


Fig. 6 - Typical Clamping Voltage vs. Peak Pulse Current

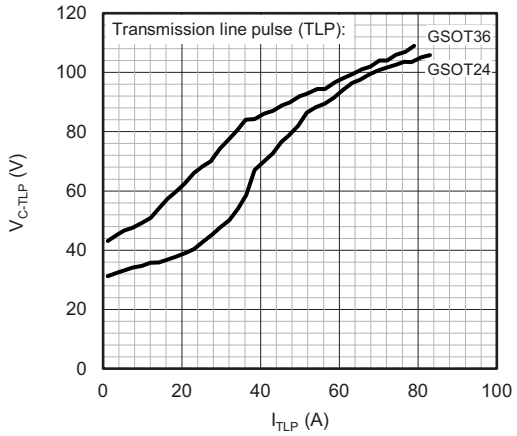


Fig. 7 - Typical Clamping Voltage vs. Peak Pulse Current

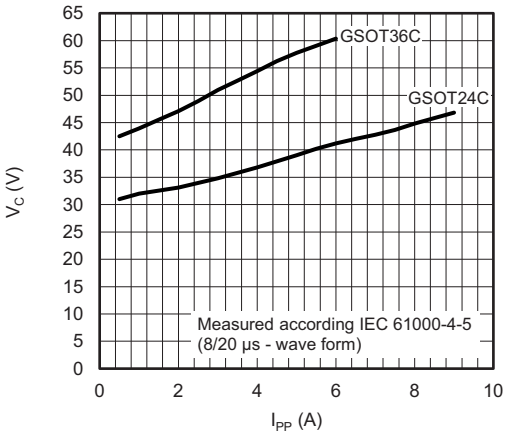


Fig. 9 - Typical Peak Clamping Voltage vs. Peak Pulse Current

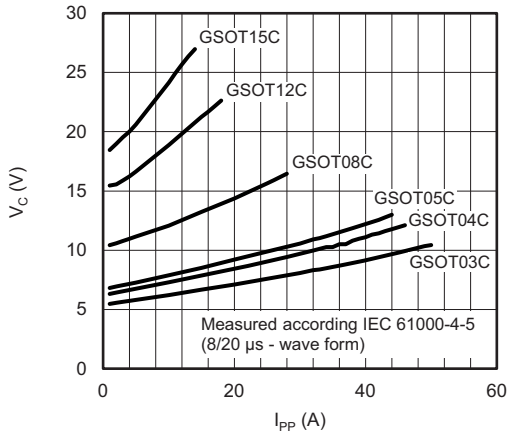


Fig. 8 - Typical Peak Clamping Voltage vs. Peak Pulse Current

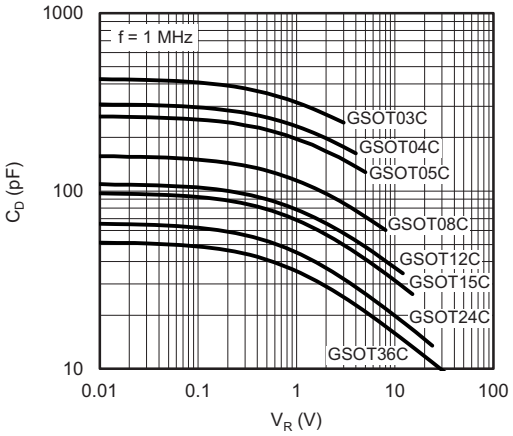
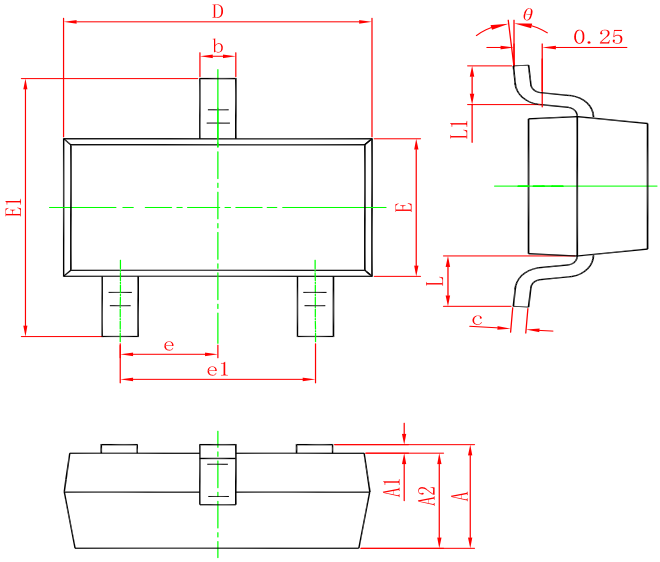


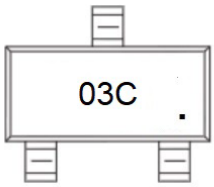
Fig. 10 - Typical Capacitance vs. Reverse Voltage

SOT-23 PACKAGE OUTLINE DIMENSIONS



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP.		0.037 TYP.	
e1	1.800	2.000	0.071	0.079
L	0.550 REF.		0.022 REF.	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

Marking



Ordering information

Order code	Package	Baseqty	Deliverymode	Marking
UMW GSOT03C-E3-08	SOT-23	3000	Tape and reel	03C
UMW GSOT04C-E3-08	SOT-23	3000	Tape and reel	04C
UMW GSOT05C-E3-08	SOT-23	3000	Tape and reel	05C
UMW GSOT08C-E3-08	SOT-23	3000	Tape and reel	08C
UMW GSOT12C-E3-08	SOT-23	3000	Tape and reel	12C
UMW GSOT15C-E3-08	SOT-23	3000	Tape and reel	15C
UMW GSOT24C-E3-08	SOT-23	3000	Tape and reel	24C
UMW GSOT36C-E3-08	SOT-23	3000	Tape and reel	36C