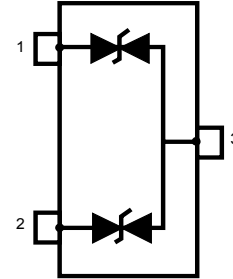


Features

- Bidirectional device
- Max. pulse power: 140 W (8/20 μ s)
- Low clamping factor V_{CL}/V_{BR}
- Low leakage current

Application

- Automotive interfaces



Characteristics

Table 1. Absolute ratings ($T_{amb} = 25\text{ }^{\circ}\text{C}$)

Symbol	Parameter		Value	Unit
V_{PP}	Peak pulse voltage	ISO 10605 - C = 150 pF, R = 330 Ω :		kV
		Contact discharge	13	
		Air discharge	13	
		ISO 10605 - C = 330 pF, R = 330 Ω :		
		Contact discharge	10	
		Air discharge	10	
		ISO 10605 - C = 330 pF, R = 2 k Ω :		
		Contact discharge	30	
		Air discharge	30	
P_{PP}	Peak pulse power dissipation (8/20 μ s) T_j initial = T_{amb}		140	W
I_{PP}	Peak pulse current (8/20 μ s)		5.5	A
T_j	Operating junction temperature range		-55 to +150	$^{\circ}\text{C}$
T_{stg}	Storage temperature range		-55 to +150	$^{\circ}\text{C}$

Figure 1. Electrical characteristics (definitions)

Symbol	Parameters
V_{RWM}	Peak Reverse Working Voltage
I_R	Reverse Leakage Current @ V_{RWM}
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
I_F	Forward Current
V_F	Forward Voltage @ I_F

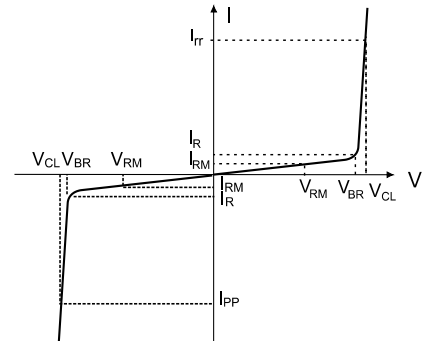


Table 2. Electrical characteristics (values, $T_{amb} = 25^\circ\text{C}$)

Symbol	Test conditions	Min.	Typ.	Max.	Unit
V_{BR}	$I_R = 1\text{ mA}$	6		10	V
I_R	$V_{RM} = 5\text{ V}$			100	nA
V_{CL}	At $I_{PP} = 1\text{ A} - 8/20\text{ }\mu\text{s}$			12	V
	At $I_{PP} = 4\text{ A} - 8/20\text{ }\mu\text{s}$			17	
$C_{I/O-GND}$	$V_{I/O} = 0\text{ V}, f = 1\text{ MHz}, V_{OSC} = 30\text{ mV}$		0.95	1.2	pF
$\Delta C_{I/O-GND}$			0.01		
f_C	$S_{21} = -3\text{ dB}$		3		GHz
$\alpha T^{(1)}$			9		$10^{-4}/^\circ\text{C}$

1. V_{BR} at $T_j = V_{BR}$ at $25^\circ\text{C} \times (1 + \alpha T \times (T_j - 25))$

1.1 Characteristics (curves)

Figure 2. Leakage current versus junction temperature

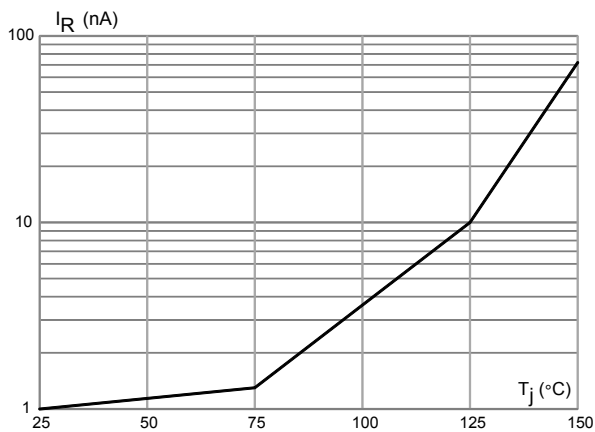


Figure 3. Junction capacitance versus reverse applied voltage

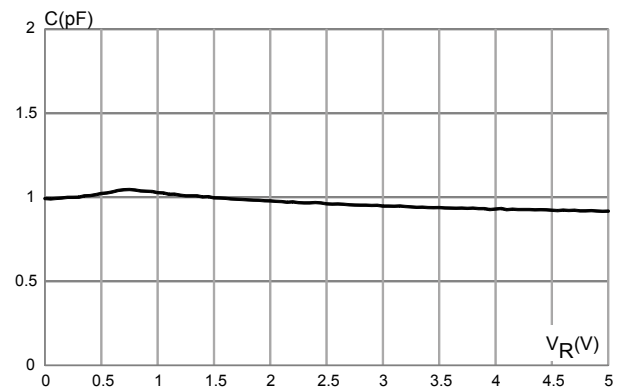


Figure 4. ESD response to ISO10605-C = 150 pF, R = 330 Ω (+8 kV contact discharge) Figure 5. ESD response to ISO10605-C = 150 pF, R = 330 Ω (-8 kV contact discharge)

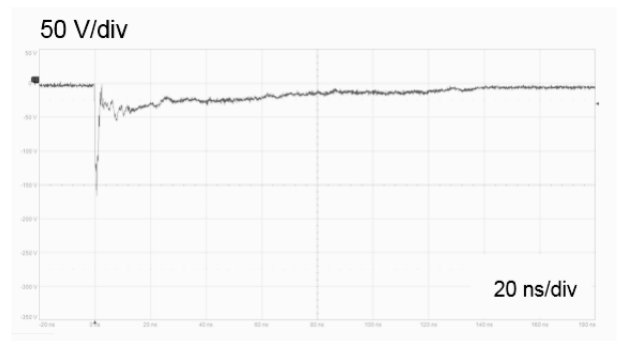
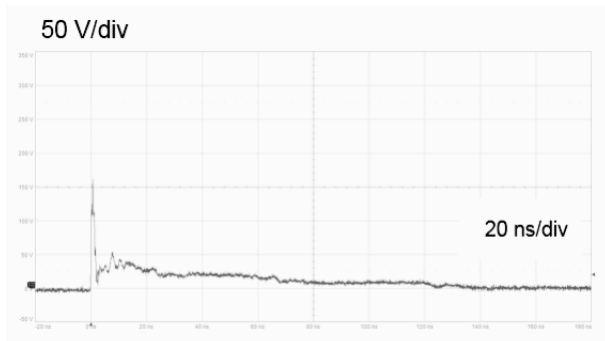


Figure 6. TLP

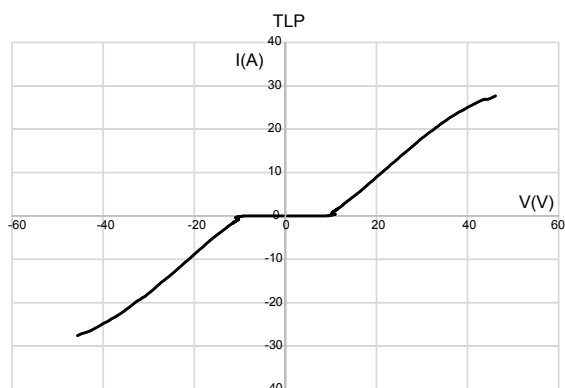


Figure 7. S₂₁ attenuation

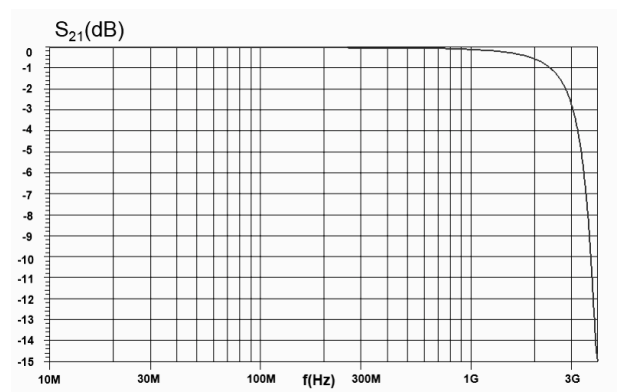


Figure 8. Fast transient pulse 3a ($U_s = -150\text{ V}$)

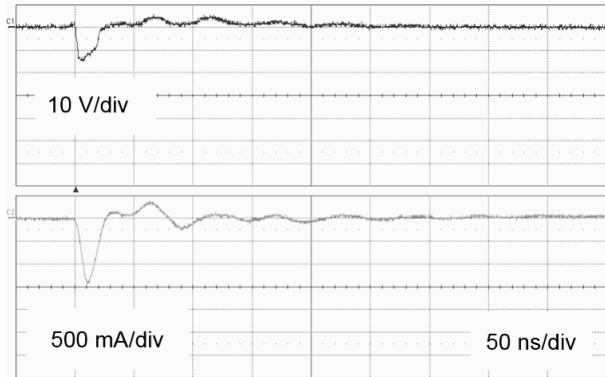


Figure 9. Fast transient pulse 3b ($U_s = +150\text{ V}$)

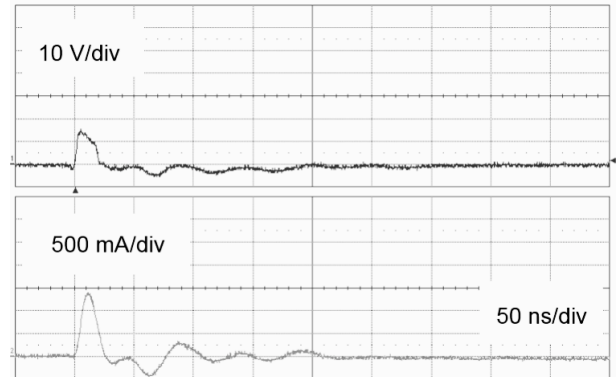


Figure 10. Slow transient pulse 2a ($U_s = -85\text{ V}$)

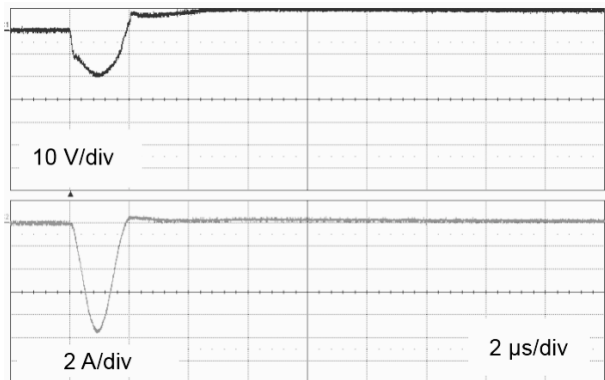
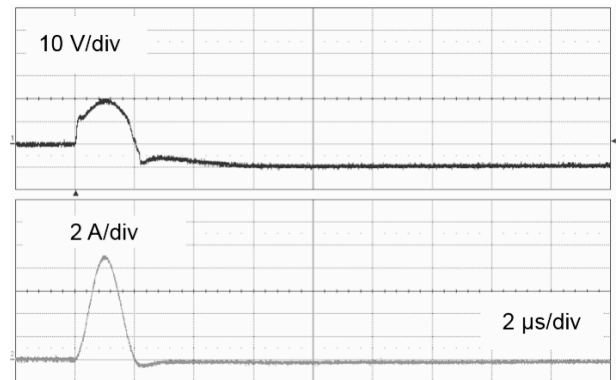
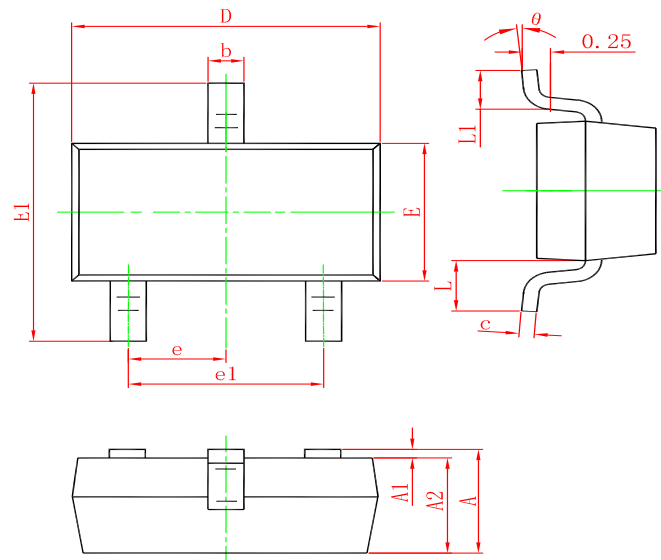


Figure 11. Slow transient pulse 2a ($U_s = +85\text{ V}$)

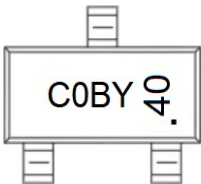


SOT-23 PACKAGE OUTLINE DIMENSIONS



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
UMW ESDAVLC6-2BLY	SOT-23	3000	Tape and reel