

SE18N6C01GF
Features

- u Stand-off voltage: 18V Max.
- u Transient protection for each line according to
IEC61000-4-2(ESD): $\pm 15\text{kV}$ (contact)
IEC61000-4-5(surge): 4A (8/20 μs)
- u Ultra-low capacitance: $C_J = 0.4\text{pF}$ (typ.)
- u Ultra-low leakage current: $I_R < 1\text{nA}$ (typ.)
- u Low clamping voltage: $V_{CL} = 10.0\text{V}$ (typ.) @ $I_{PP} = 16\text{A}$ (TLP)
- u Solid-state silicon technology

Applications

- u USB 2.0 and USB 3.0
- u HDMI 1.3, HDMI 1.4 and HDMI 2.0
- u SATA and eSATA interface
- u DVI
- u IEEE 1394
- u Portable Electronics and Notebooks

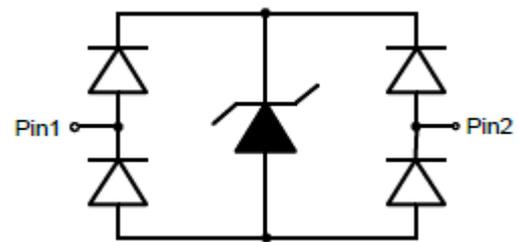
Mechanical Characteristics

- u DFN1006-2L Package
- u Quantity Per Reel : 10,000pcs
- u Reel Size : 7 inch
- u Lead Finish : Lead Free

Absolute Maximum Ratings

Symbol	Parameter	Value	Units
P_{PK}	Peak pulse power ($t_p=8/20\mu\text{s}$)	40	W
I_{PP}	Peak pulse current ($t_p=8/20\mu\text{s}$)	4	A
V_{ESD}	ESD according to IEC61000-4-2 air discharge	± 15	kV
	ESD according to IEC61000-4-2 contact discharge	± 15	
T_J	Junction Temperature	125	$^{\circ}\text{C}$
T_{OP}	Operating Temperature	-40 ~ +85	$^{\circ}\text{C}$
T_L	Lead Temperature	260	$^{\circ}\text{C}$
T_{STG}	Storage Temperature	-55 ~ +150	$^{\circ}\text{C}$

DFN1006-2L

Pin Configuration


SE18N6C01GF
Electrical Characteristics ($T_A = 25^\circ\text{C}$, unless otherwise noted)

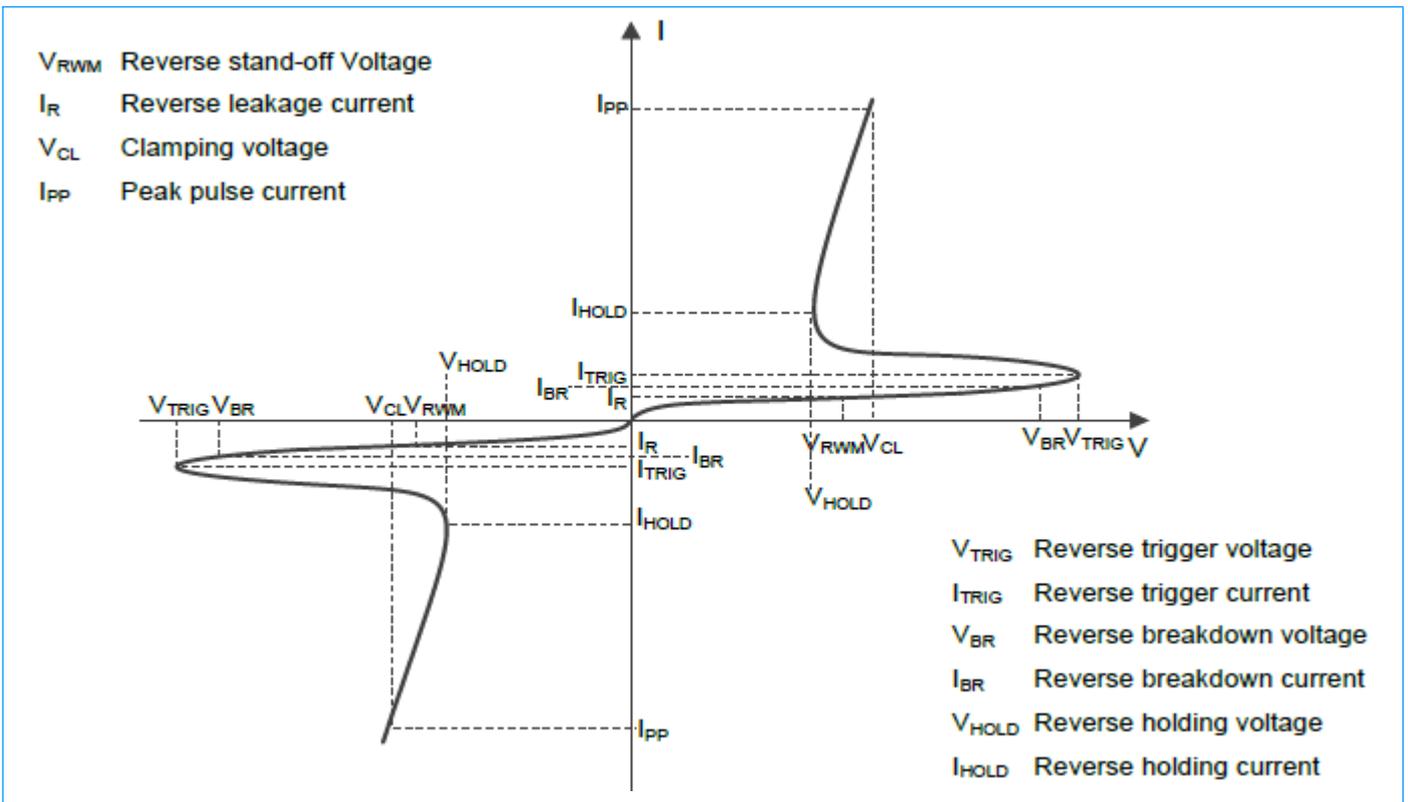
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse maximum working voltage	V_{RWM}	--	--	--	± 18	V
Reverse leakage current	I_R	$V_{RWM} = 18\text{V}$	--	1	50	nA
Reverse breakdown voltage	V_{BR}	$I_T = 1\text{mA}$	18.5	--	--	V
Clamping Voltage ⁽¹⁾	V_{CL}	$I_{PP} = 16\text{A}$, $t_P = 100\text{ns}$	--	10.0	--	V
Dynamic resistance ⁽¹⁾	R_{DYN}	--	--	0.25	--	Ω
Clamping Voltage ⁽²⁾	V_{CL}	$V_{ESD} = 8\text{kV}$	--	10.0	--	V
Clamping Voltage ⁽³⁾	V_{CL}	$I_{PP} = 4\text{A}$, $t_P = 8/20\mu\text{s}$	--	24	--	V
Junction Capacitance	C_J	$V_R = 0\text{V}$, $f = 1\text{MHz}$	--	0.4	0.55	pF

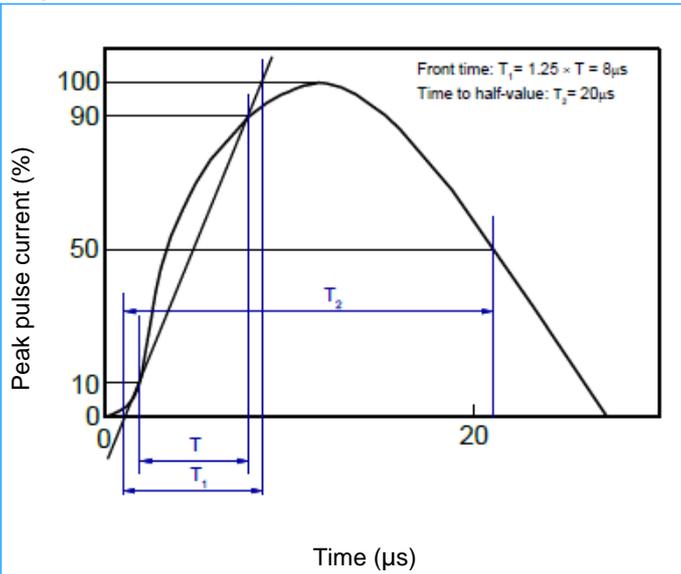
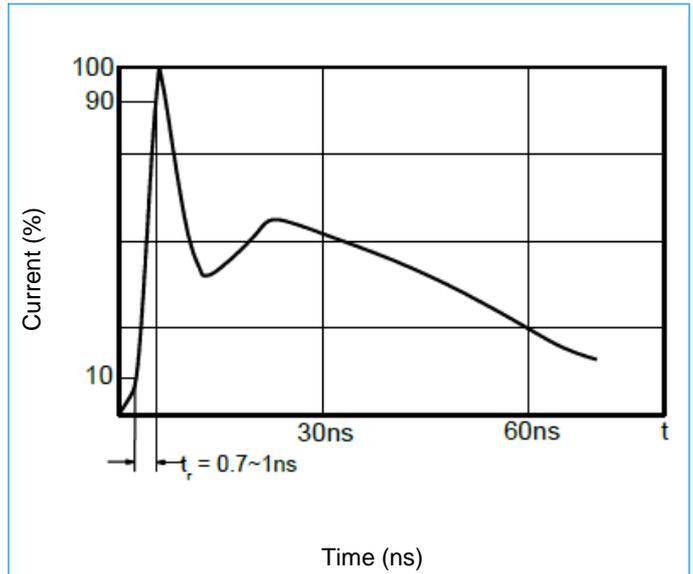
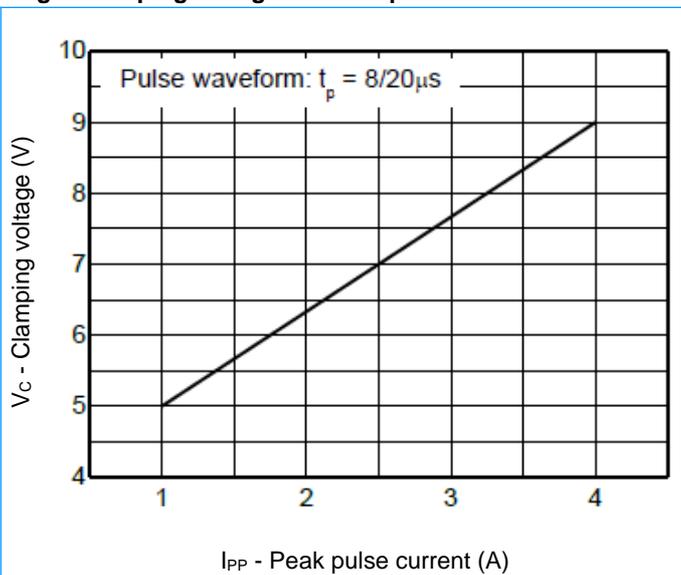
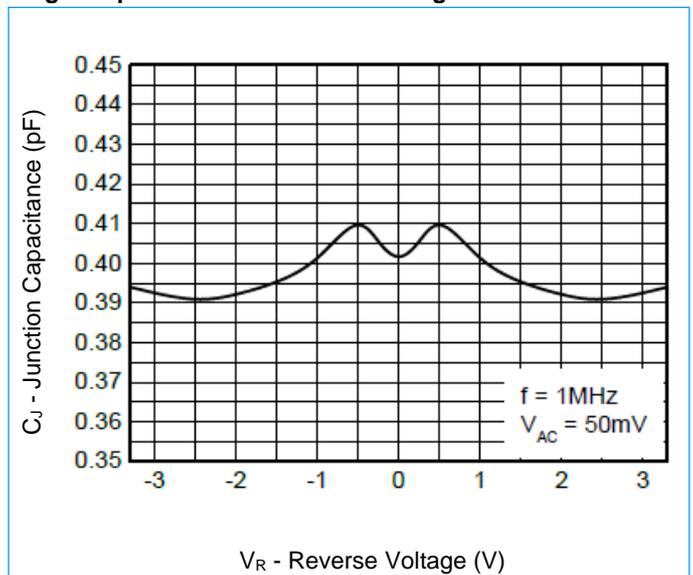
Notes:

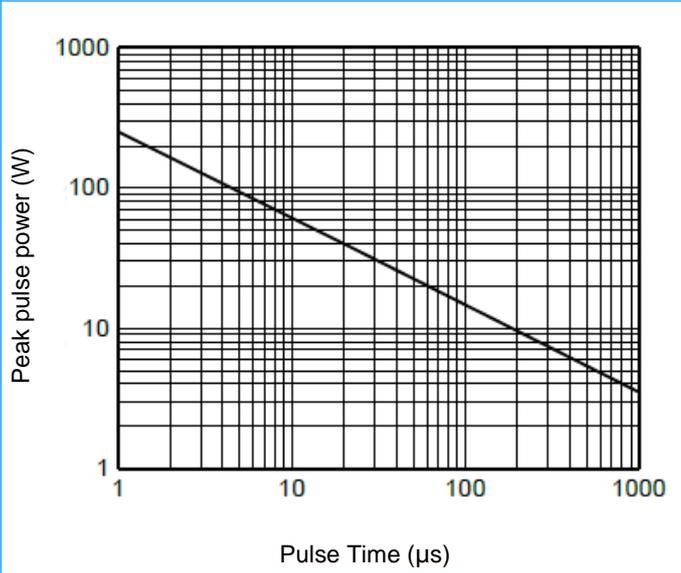
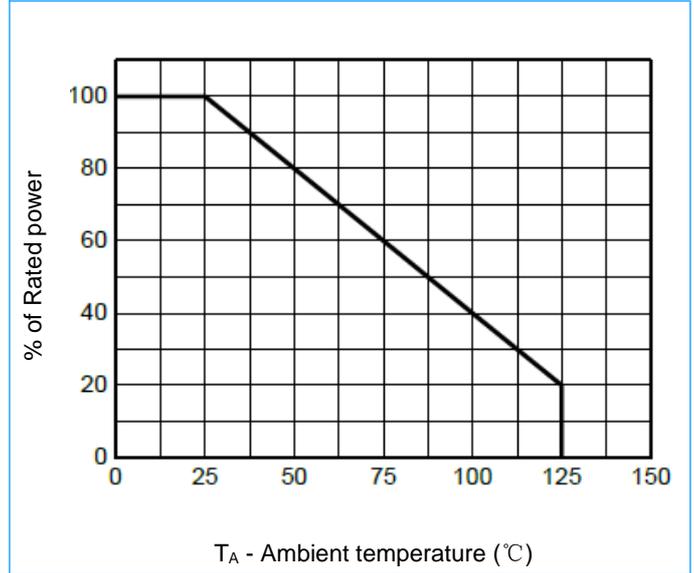
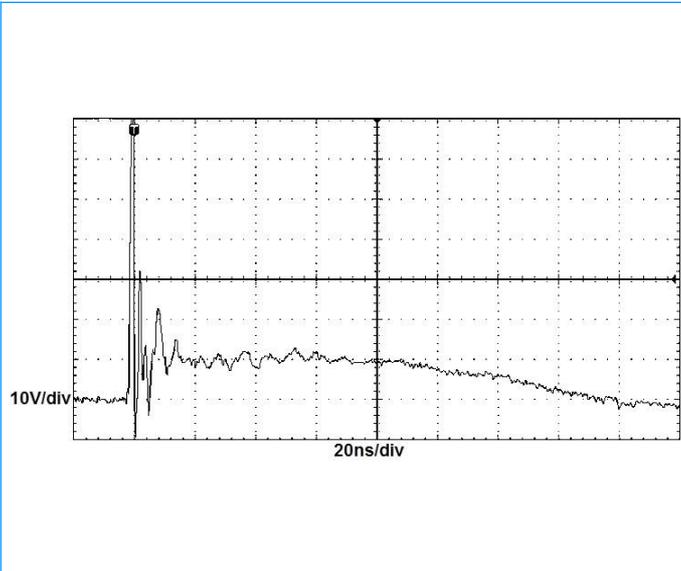
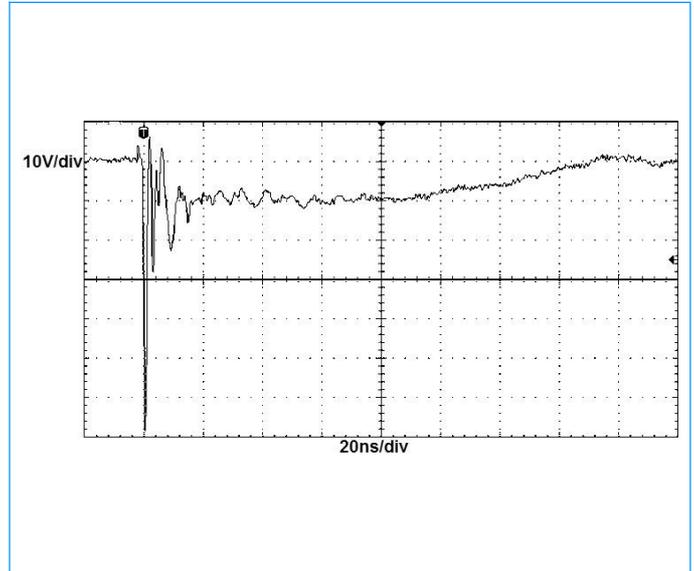
(1) TLP parameter: $Z_0=50\Omega$, $t_p=100\text{ns}$, $t_r=2\text{ns}$, averaging window from 60ns to 80ns. R_{DYN} is calculated from 4A to 16A.

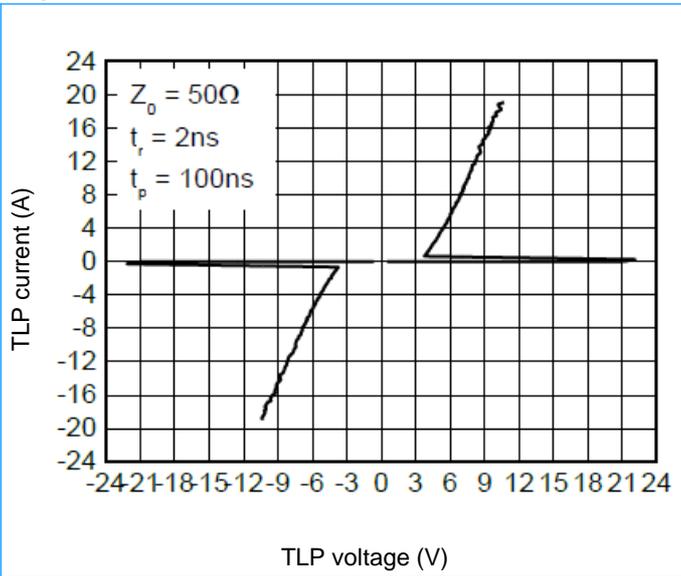
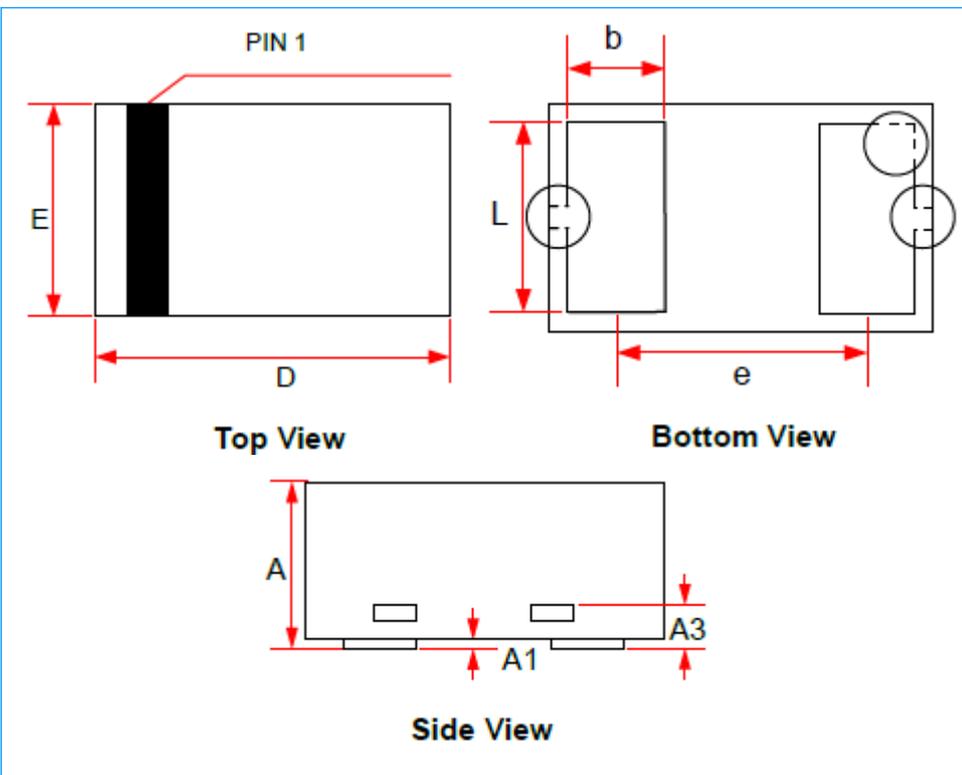
(2) Contact discharge mode, according to IEC61000-4-2.

(3) Non-repetitive current pulse, according to IEC61000-4-5.

Electrical Characteristic Curves ($T_A = 25^\circ\text{C}$, unless otherwise noted)


Typical Characteristic Curves ($T_A = 25^\circ\text{C}$, unless otherwise noted)
Fig1. 8/20 μs waveform per IEC61000-4-5

Fig2. Contact discharge current waveform per IEC61000-4-2

Fig3. Clamping voltage vs. Peak pulse current

Fig4. Capacitance vs. Reverse voltage


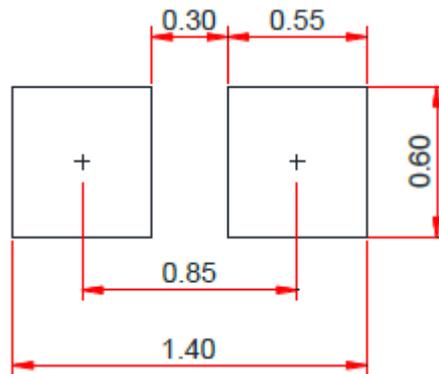
Typical Characteristic Curves ($T_A = 25^\circ\text{C}$, unless otherwise noted) (Continue)
Fig5. Non-repetitive peak pulse power vs. Pulse time

Fig6. Power derating vs. Ambient temperature

**Fig7. ESD clamping
(+8kV contact discharge per IEC61000-4-2)**

**Fig8. ESD clamping
(-kV contact discharge per IEC61000-4-2)**


SE18N6C01GF
Typical Characteristic Curves ($T_A = 25^\circ\text{C}$, unless otherwise noted) (Continue)
Fig9. TLP Measurement

DFN1006-2L Package Outline & Dimensions


Symbol	Dimensions in Millimeters		
	Min.	Typ.	Max.
A	0.340	0.450	0.530
A1	0.000	0.020	0.050
A3	0.125 Ref.		
D	0.950	1.000	1.075
E	0.550	0.600	0.675
b	0.200	0.250	0.300
L	0.450	0.500	0.550
e	0.650 BSC		

SE18N6C01GF

Recommended PCB Layout (Unit: mm)

**Notes:**

This recommended land pattern is for reference purposes only.

Please consult your manufacturing group to ensure your PCB design guidelines are met.