

1 Characteristics

Table 2: Absolute ratings ($T_{amb} = -40$ to $85\text{ }^{\circ}\text{C}$)

Symbol	Parameter		Value	Unit
I _{pp}	Peak pulse current	8/20μs	30	A
dI/dt	Critical rate of on-state current rise		1000	A/μs
T _{stg}	Storage junction temperature range		-55 to +150	°C
T _j	Maximum operating junction temperature			
T _L	Maximum temperature for soldering during 10 s		260	°C

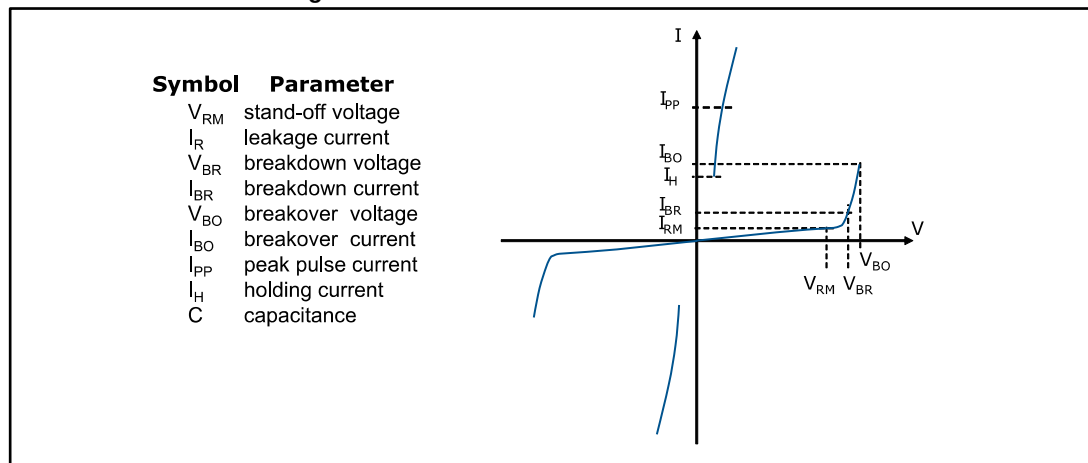
Table 3: Electrical characteristics ($T_{amb} = 25\text{ }^{\circ}\text{C}$, pin 1 to pin 3)

Order code	I_{RM} at V_{RM}					V_{BR} at 1 mA	V_{BO}	I_H	$C^{(1)}$	$\Delta C^{(2)}$
	Typ.	Max.	Typ.	Max.		Min.	Max.	Typ.	Max.	Typ.
	$T_{amb} = 85\text{ }^{\circ}\text{C}$									
	nA					V	V	V	mA	pF
DSL05-008SC6	0.1	50	7	100	8	9.5	15	50	1.5	0.25
DSL05-012SC6	0.1	50	7	100	12	12.8	18	10	1.5	0.25
DSL05-016SC6	0.1	50	7	100	16	18	25	30	1.5	0.25
DSL05-024SC6	0.1	50	7	100	24	25.5	31	50	1.5	0.25

Notes:

⁽¹⁾Test conditions: $V_R = 2\text{ V}$ bias, $V_{RMS} = 1\text{ V}$, $f = 1\text{ MHz}$

⁽²⁾Measured between 1 V and V_{RM}

Figure 2: Electrical characteristics definitions


1.1 Characteristics (curves)

Figure 3: Peak pulse power dissipation versus initial junction temperature (maximum values)

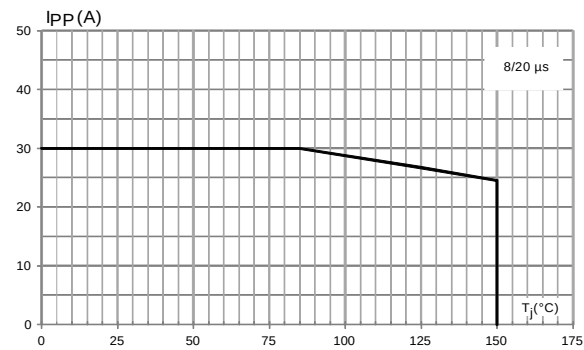


Figure 4: Leakage current versus junction temperature

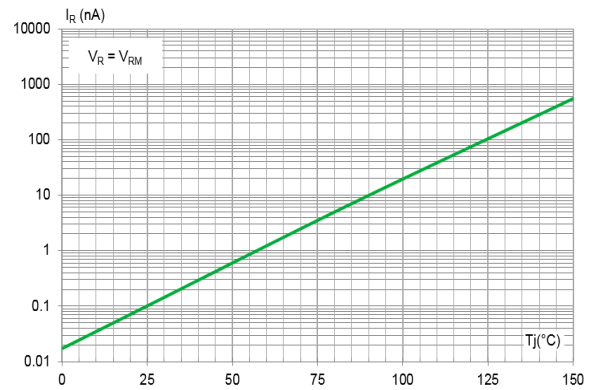


Figure 5: Junction capacitance versus reverse voltage

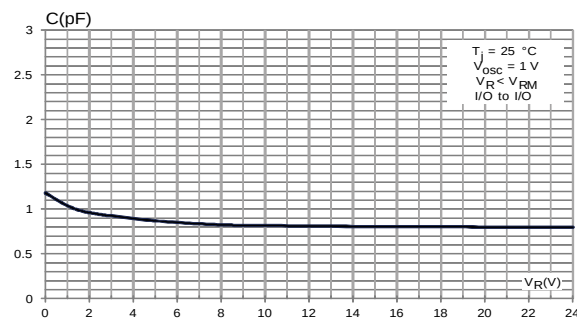


Figure 6: Junction capacitance versus junction temperature

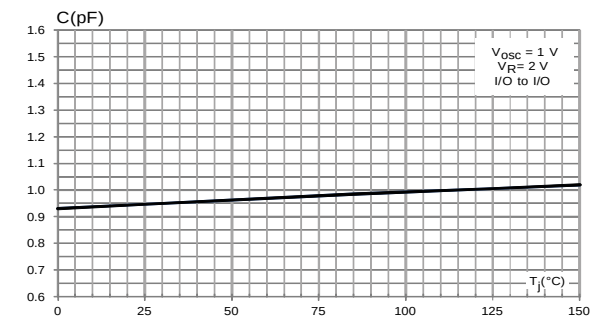
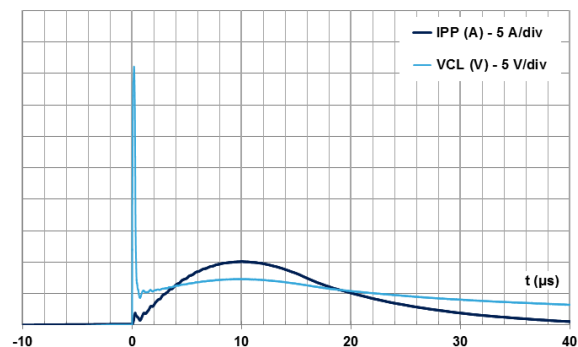


Figure 7: Clamping response to 8/20 μs surge ($I_{pp} = 10$ A)



2 Schematics

Figure 8: xDSL and G.FAST schematic for CPE applications

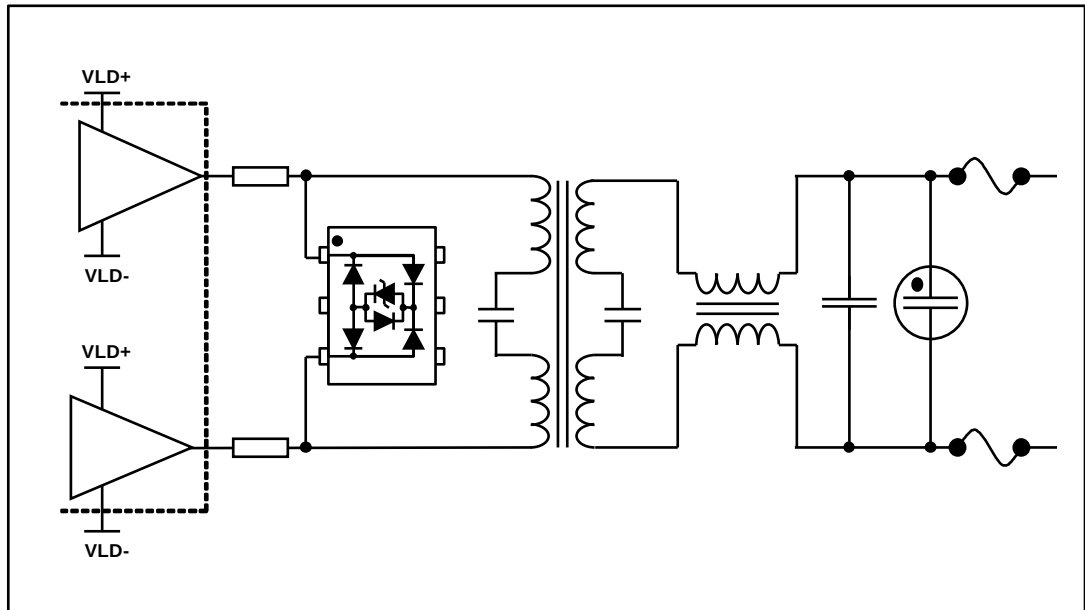
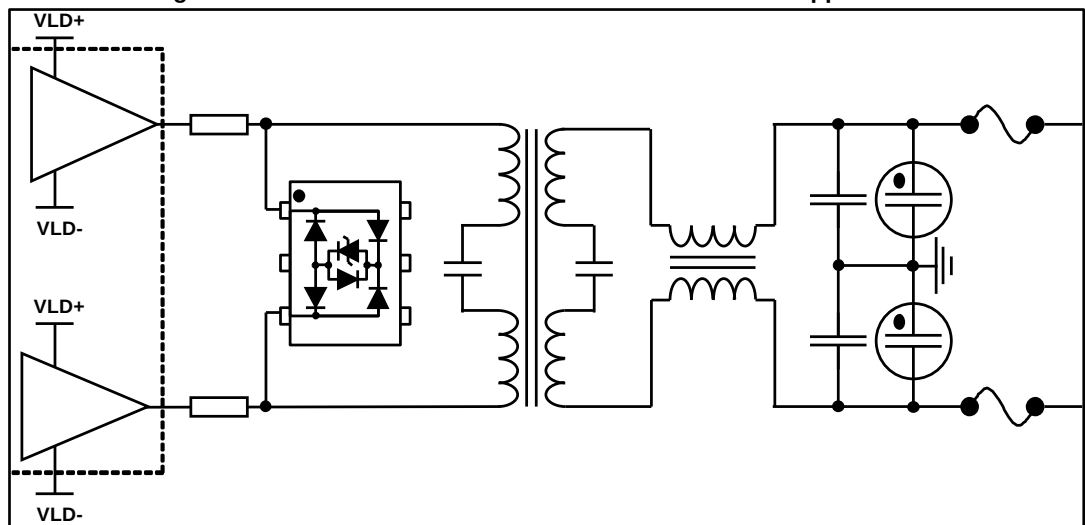


Figure 9: xDSL and G.FAST schematic for infrastructure applications



On topologies given in [Figure 8: "xDSL and G.FAST schematic for CPE applications"](#) and [Figure 9: "xDSL and G.FAST schematic for infrastructure applications"](#), +VLD and -VLD may not be connected.

3 Package information

In order to meet environmental requirements, ST offers these devices in different grades of ECOPACK® packages, depending on their level of environmental compliance. ECOPACK® specifications, grade definitions and product status are available at: www.st.com. ECOPACK® is an ST trademark.

- Epoxy meets UL 94,V0
- Lead-free package

3.1 SOT23-6L package information

Figure 10: SOT23-6L package outline

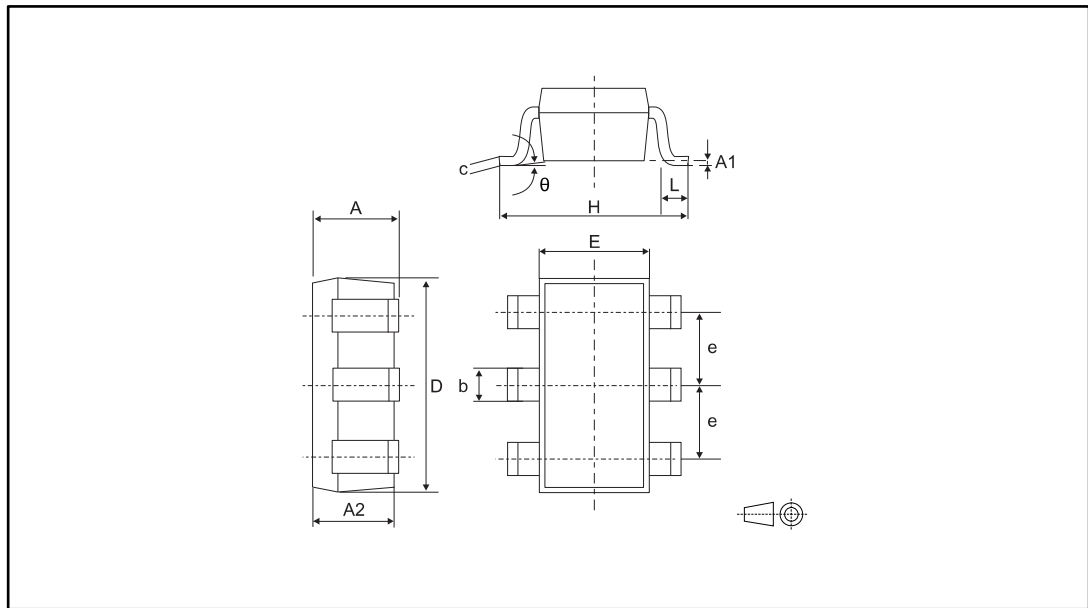
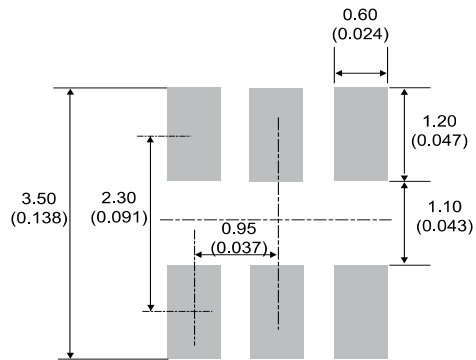
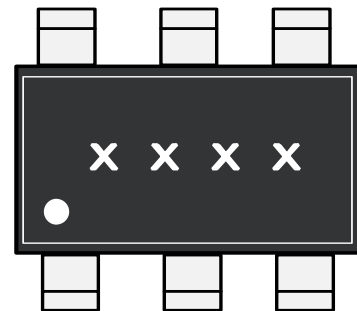
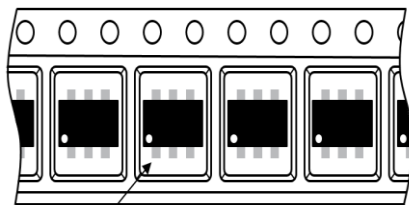


Table 4: SOT23-6L package mechanical data

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	0.9		1.45	0.0354		0.0571
A1	0		0.15	0		0.0059
A2	0.9		1.3	0.0354		0.0512
b	0.30		0.5	0.0118		0.0197
c	0.09		0.2	0.0035		0.0079
D	2.8		3.05	0.1102		0.1201
E	1.5		1.75	0.0591		0.0689
e		0.95			0.0374	
H	2.6		3	0.1024		0.1181
L	0.3		0.6	0.0118		0.0236
θ	0		10	0		0.3937

Figure 11: Footprint recommendations, dimensions in mm (inches)**Figure 12: Marking layout (refer to ordering information table for marking)****Figure 13: Package orientation in reel**

Note: Pocket dimensions are not on scale
Pocket shape may vary depending on package

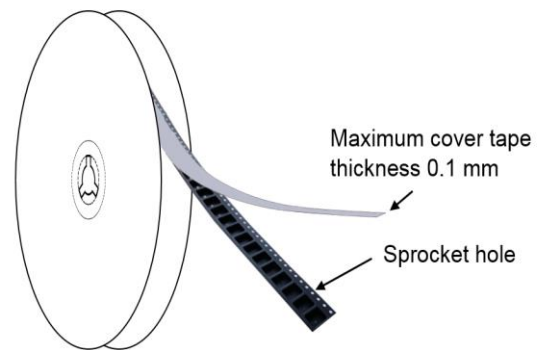
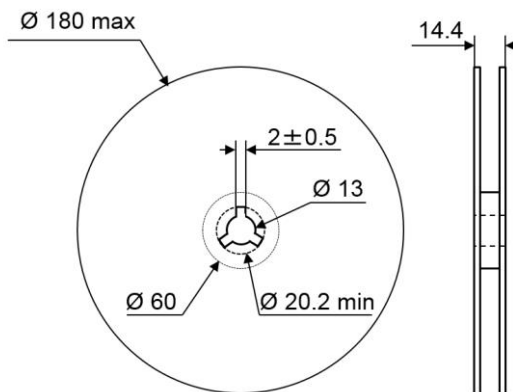
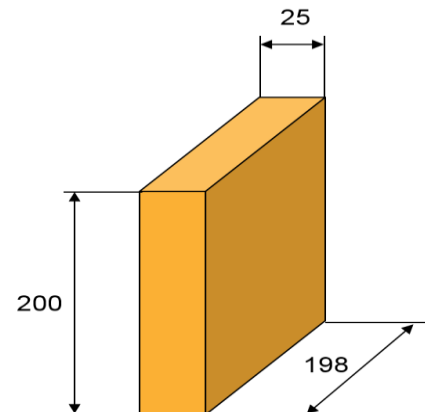
Figure 14: Tape and reel orientation**Figure 15: Reel dimensions (mm)****Figure 16: Inner box dimensions (mm)**

Figure 17: Tape and reel outline

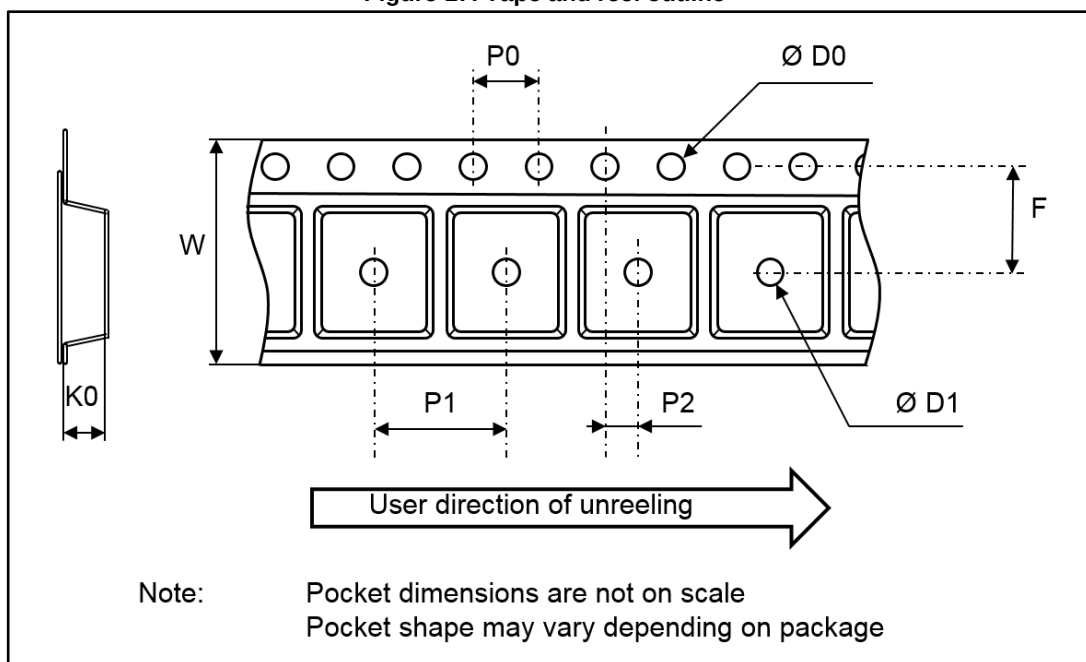
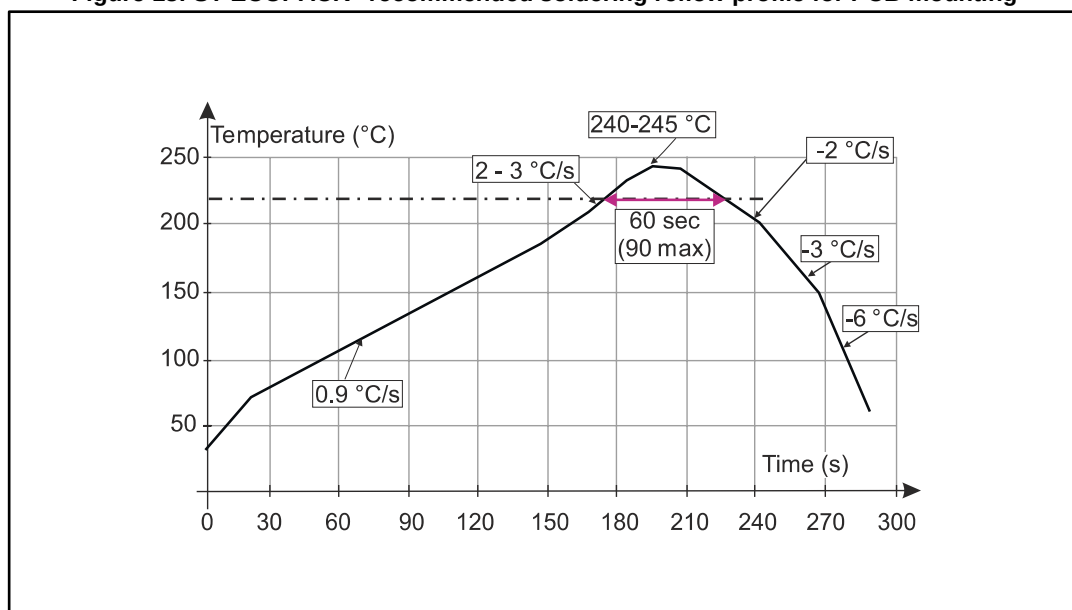


Table 5: Tape and reel mechanical data

Ref.	Dimensions		
	Millimeters		
	Min.	Typ.	Max.
P1	3.9	4	4.1
P0	3.9	4	4.1
D0	1.45	1.5	1.6
D1	1		
F	3.45	3.5	3.55
K0	1.3	1.4	1.6
P2	1.95	2	2.05
W	7.9	8	8.3

Figure 18: ST ECOPACK® recommended soldering reflow profile for PCB mounting



Minimize air convection currents in the reflow oven to avoid component movement. Maximum soldering profile corresponds to the latest IPC/JEDEC J-STD-020.

4 Ordering information

Figure 19: Ordering information scheme

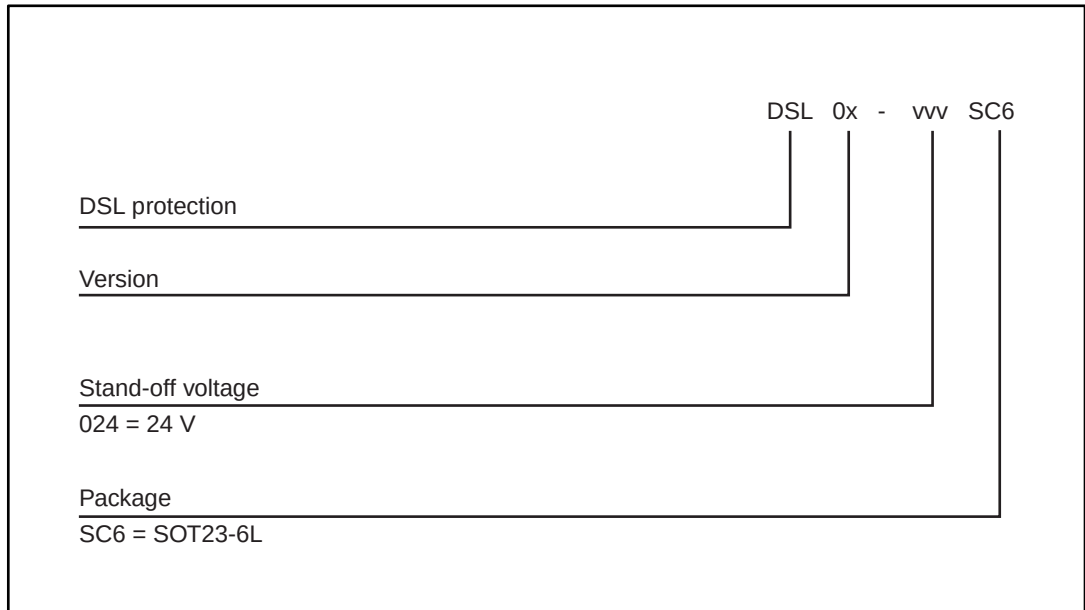


Table 6: Ordering information

Order code	Marking	Package	Weight	Base qty.	Delivery mode
DSL05-008SC6	D508	SOT23-6L	14 g	3000	Tape and reel
DSL05-012SC6	D512				
DSL05-016SC6	D516				
DSL05-024SC6	D524				

5 Revision history

Table 7: Document revision history

Date	Revision	Changes
05-Jul-2016	1	Initial release.
03-Oct-2016	2	Updated Table 3: "Electrical characteristics ($T_{amb} = 25\text{ °C}$, pin 1 to pin 3)".
22-Aug-2017	3	Added RPN DSL05-016SC6. Updated Table 3: "Electrical characteristics ($T_{amb} = 25\text{ °C}$, pin 1 to pin 3)" and Figure 4: "Leakage current versus junction temperature" .

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