Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

Contact us

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Email & Skype: info@chipsmall.com Web: www.chipsmall.com
Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China

Ordering number : EN9056

TND525SS

Excellent Power Device
Half-bridge Drive, Single SOIC8

ON Semiconductor®

http://onsemi.com

Features

- 2-input 2-output half-brigde drive
- Low side output supervisory circuit is built in (Simultaneous ON preventing circuit)
- Allows simplified configuration of driver circuit
- Withstand voltage of 600V is assured
- High-speed switching
- Monolithic structure
- Fully compatible input to LSTTL/CMOS
- Output current: 170mA Source, 340mA Sink
- Halogen free compliance

Specifications

Absolute Maximum Ratings at Ta=25°C (All voltage parameters are absolute voltage feferenced to GND)

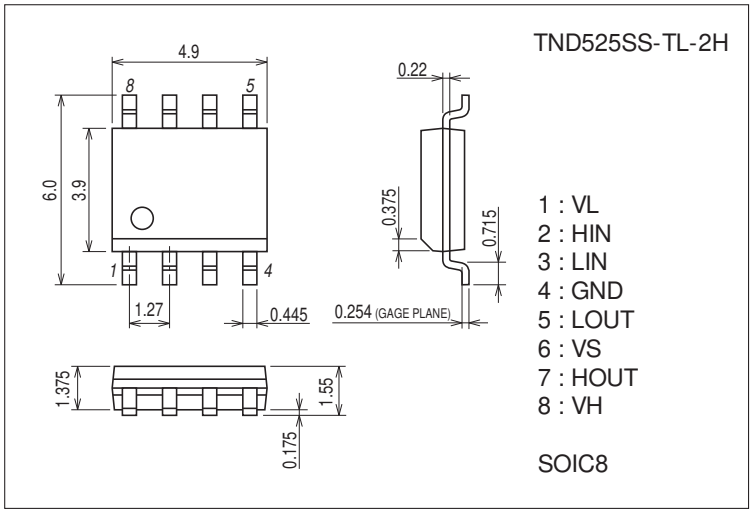
Parameter	Symbol	Conditions	Ratings	Unit
High Side Floating Supply Voltage	V_H		−0.3 to 625	V
High Side Floating Supply Offset Voltage	V_S		V_H−25 to V_H+0.3	V
High Side Output Voltage	V_{HOUT}		V_S−0.3 to V_H+0.3	V
Low Side Supply Voltage	V_L		−0.3 to 25	V
Low Side Output Voltage	V_{LOUT}		−0.3 to V_L+0.3	V
Logic Input Voltage (H_{IN}, L_{IN})	V_{IN}		−0.3 to V_L+0.3	V
The Maximum Allowable Offset Voltage Supply dv/dt	dV_S/dt		50	V/ns
Allowable Power Dissipation	P_D	When mounted on ceramic substrate (1200mm^2×0.8mm)	1.2	W
Junction Temperature	Tj		−55 to +150	°C
Storage Temperature	Tstg		−55 to +150	°C

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

Package Dimensions

unit : mm (typ)

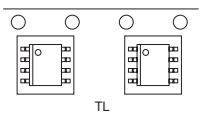
7072-006



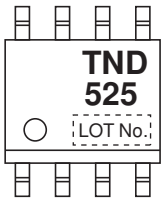
Product & Package Information

- Package : SIOC8
- JEITA, JEDEC : SC-87, SOT-96
- Minimum Packing Quantity : 2,500 pcs./reel

Packing Type: TL



Marking



Recommend Operating Conditions at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
High Side Floating Supply Voltage	V_H		V_S+10 to V_S+20	V
High Side Floating Supply Offset Voltage	V_S	V_L=V_{HS}=15V	−5 to 600	V
High Side Output Voltage	V_{HOUT}		V_S to V_H	V
Low Side Supply Voltage	V_L		+10 to +20	V
Low Side Output Voltage	V_{LOUT}		0 to V_L	V
Logic Input Voltage (H_{IN}, L_{IN})	V_{IN}		0 to V_L	V
Ambient Temperature	Topr		−40 to +125	°C

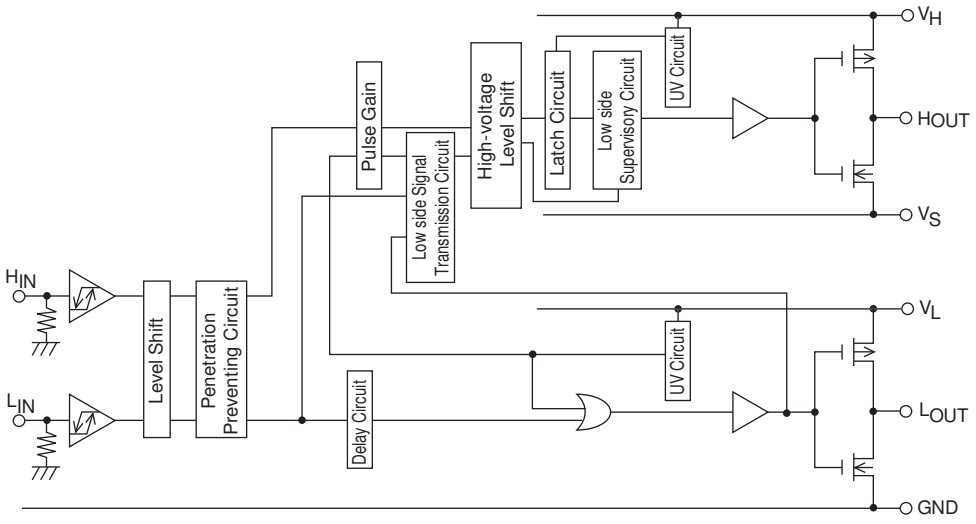
AC Characteristics at Ta=25°C (V_L=V_{HS}=15V, C_L=1000pF)

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Turn-ON Delay Time	t_{on}	V_S=0V	70	100	130	ns
Turn-OFF Delay Time	t_{off}	V_S=0V	60	90	120	ns
Turn-ON Rise Time	t_r			80	110	ns
Turn-OFF Fall Time	t_f			35	55	ns
Delay Matching, HS and LS Turn-ON	Mt_{on}	$\lvert Ht_{on} - Lt_{on} \rvert$		5	30	ns
Delay Matching, HS and LS Turn-OFF	Mt_{off}	$\lvert Ht_{off} - Lt_{off} \rvert$		5	30	ns

DC Characteristics at Ta=25°C (V_L=V_{HS}=15V)

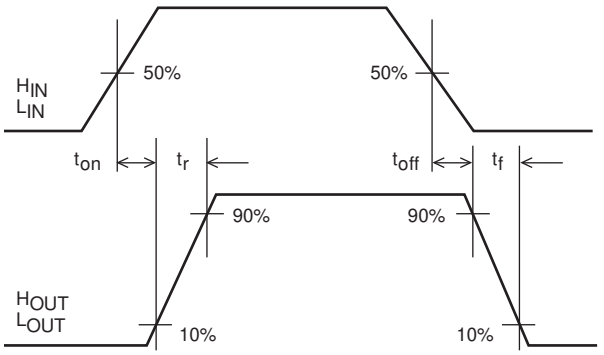
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Logic “1” Input Voltage	V_{IH}	V_L=10 to 20V	2.8			V
Logic “0” Input Voltage	V_{IL}	V_L=10 to 20V			0.8	V
High-level Output Voltage, V_{BIAS}-V_O	V_{OH}	V_{IN}=V_{IH}, I_O=0A			0.1	V
Low-level Output Voltage, V_O	V_{OL}	V_{IN}=V_{IL}, I_O=0A			0.1	V
Offset Supply Leakage Current	I_{LK}	V_H=V_S=600V			10	μA
Quiescent V_H Supply Current	I_{QH}	V_{IN}=0V		50	100	μA
		V_{IN}=V_L		60	100	μA
Quiescent V_L Supply Current	I_{QL}	V_{IN}=0V		130	230	μA
		V_{IN}=V_L		170	260	μA
Logic “1” Input Bias Current	I_{IN+}	V_{IN}=V_L		20	55	μA
Logic “0” Input Bias Current	I_{IN-}	V_{IN}=0V			1	μA
V_H Supply Undervoltage Positive Going Threshold	V_{HUV+}		7.6	8.9	9.9	V
V_H Supply Undervoltage Negative Going Threshold	V_{HUV-}		6.7	8.1	9.5	V
V_L Supply Undervoltage Positive Going Threshold	V_{LUV+}		7.6	8.9	9.9	V
V_L Supply Undervoltage Negative Going Threshold	V_{LUV-}		6.7	8.1	9.5	V
Output High Short Circuit Pulsed Current	I_{O+}	V_{OUT}=0V, PW≤10μs	170	200		mA
Output Low Short Circuit Pulsed Current	I_{O-}	V_{OUT}=15V, PW≤10μs	340	400		mA

Block Diagram



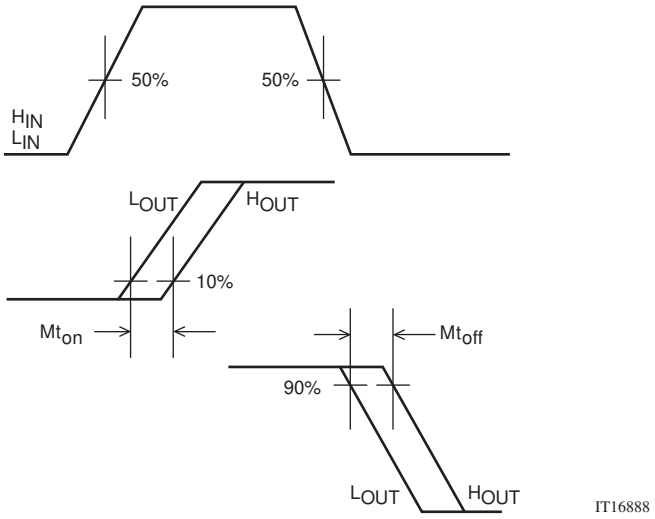
IT16886

Switching Time Waveform Definition

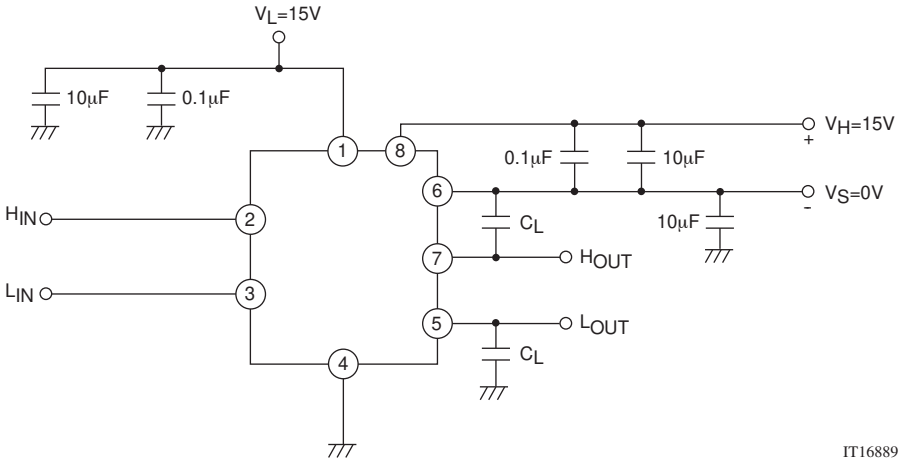


IT16887

Delay Matching Waveform Definition

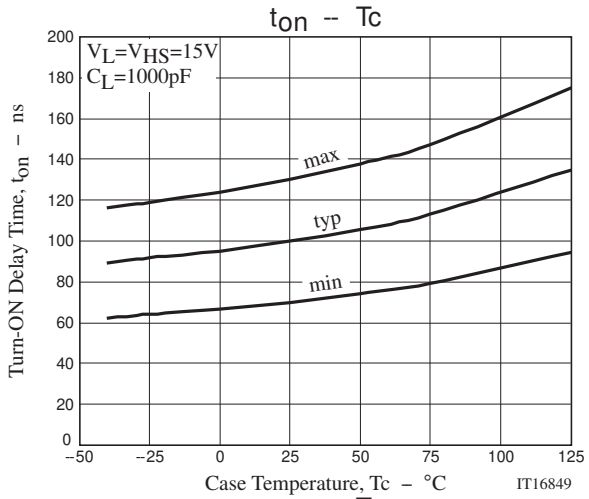


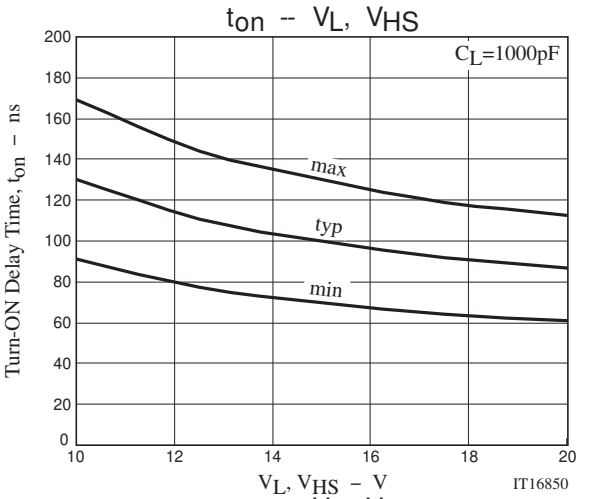
Switching Time Test Circuit

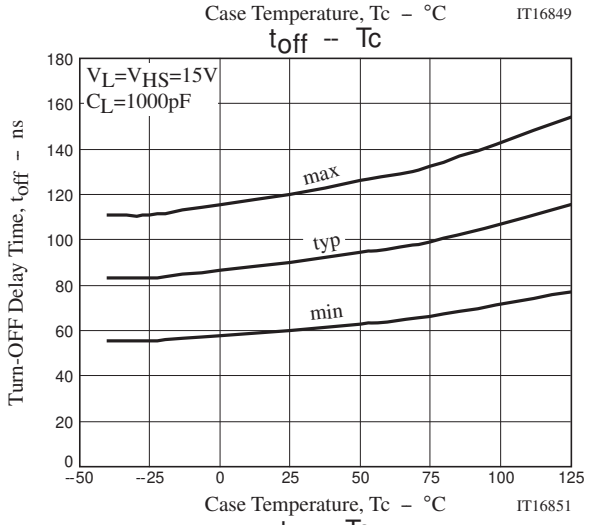


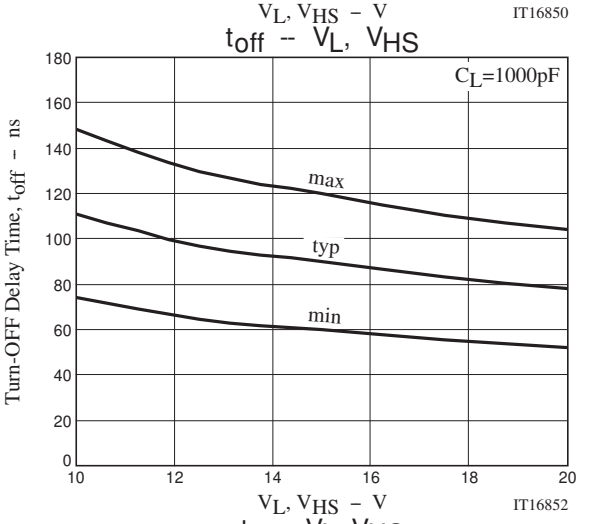
Ordering Information

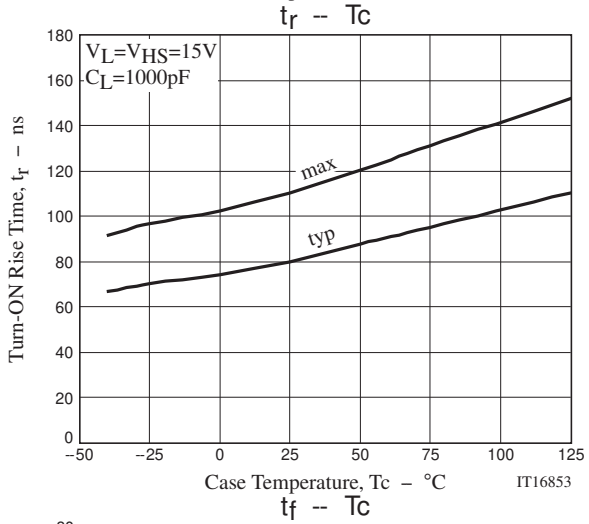
Devices	Package	Shipping	memo
TND525SS-TL-2H	SOIC8	2,500pcs./reel	Pb Free and Halogen Free

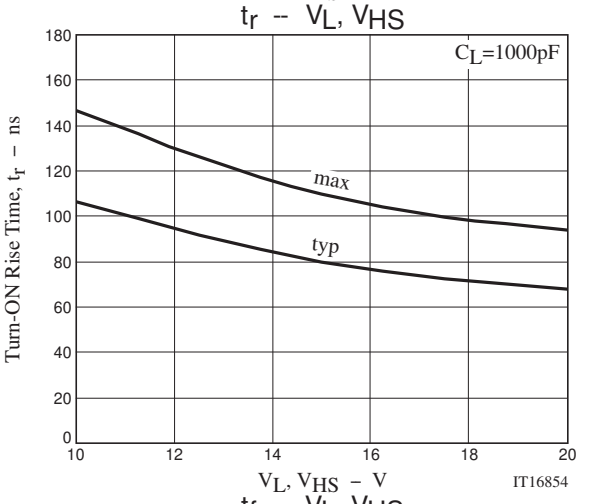

ton -- Tc
VL=VHS=15V
CL=1000pF
max
typ
min
Turn-ON Delay Time, ton – ns
Case Temperature, Tc – °C
IT16849

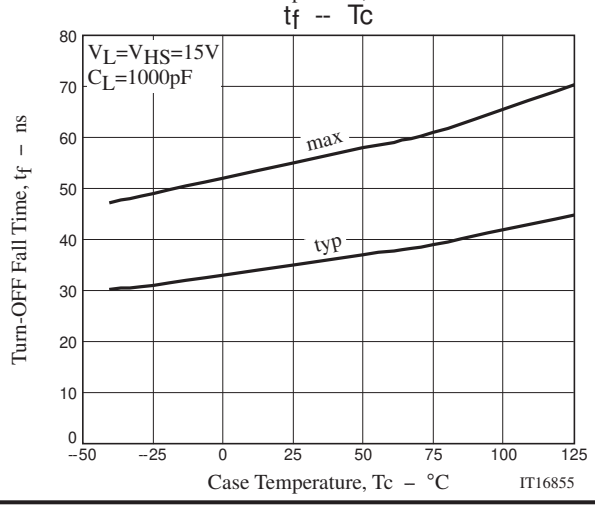

ton -- VL, VHS
CL=1000pF
max
typ
min
Turn-ON Delay Time, ton – ns
VL, VHS – V
IT16850

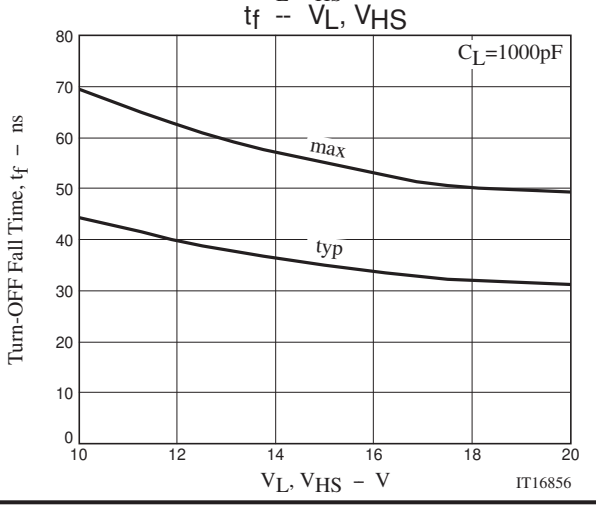

toff -- Tc
VL=VHS=15V
CL=1000pF
max
typ
min
Turn-OFF Delay Time, toff – ns
Case Temperature, Tc – °C
IT16851


toff -- VL, VHS
CL=1000pF
max
typ
min
Turn-OFF Delay Time, toff – ns
VL, VHS – V
IT16852

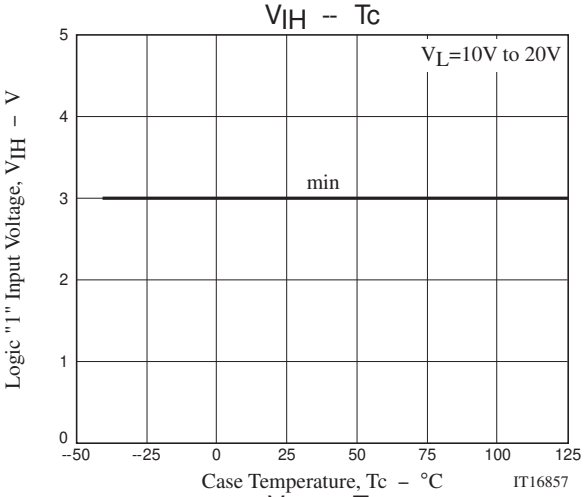

tr -- Tc
VL=VHS=15V
CL=1000pF
max
typ
Turn-ON Rise Time, tr – ns
Case Temperature, Tc – °C
IT16853


tr -- VL, VHS
CL=1000pF
max
typ
Turn-ON Rise Time, tr – ns
VL, VHS – V
IT16854

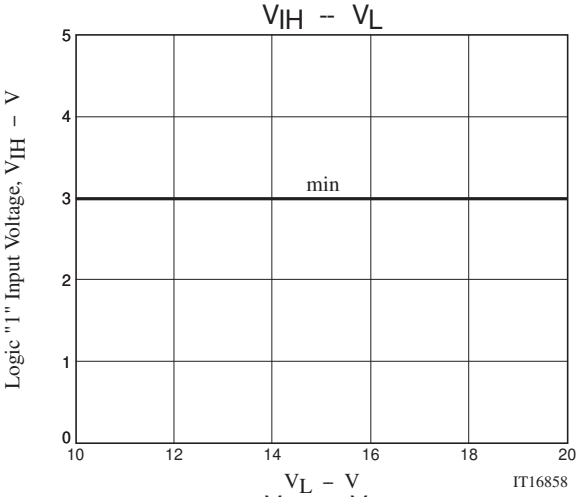

tf -- Tc
VL=VHS=15V
CL=1000pF
max
typ
Turn-OFF Fall Time, tf – ns
Case Temperature, Tc – °C
IT16855


tf -- VL, VHS
CL=1000pF
max
typ
Turn-OFF Fall Time, tf – ns
VL, VHS – V
IT16856

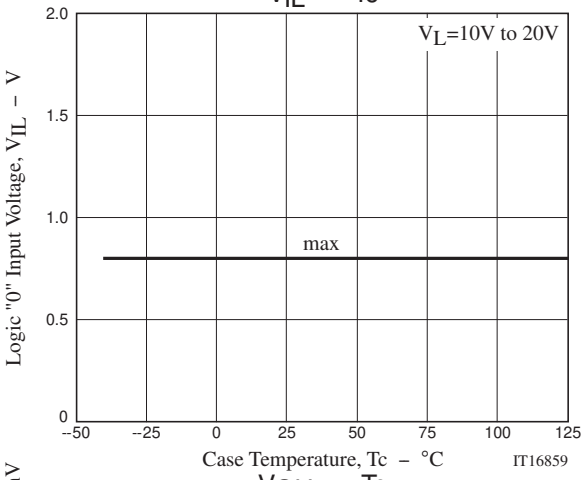
V_{IH} -- Tc



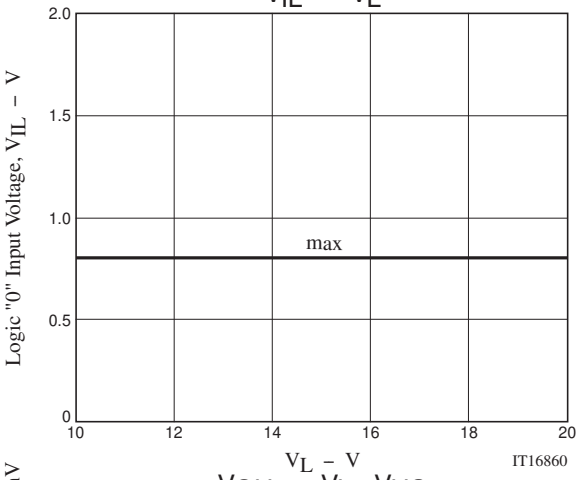
V_{IH} -- V_L



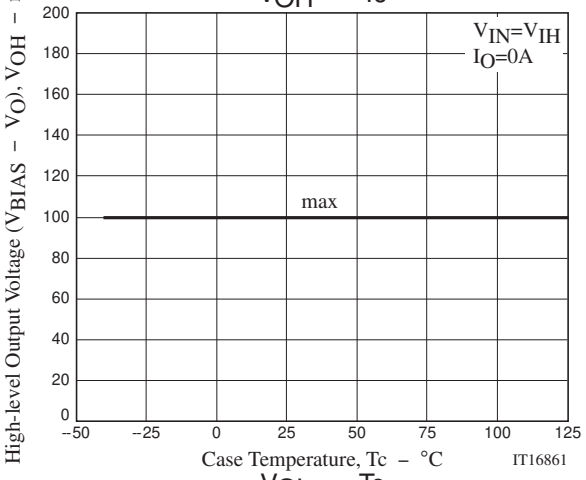
V_{IL} -- Tc



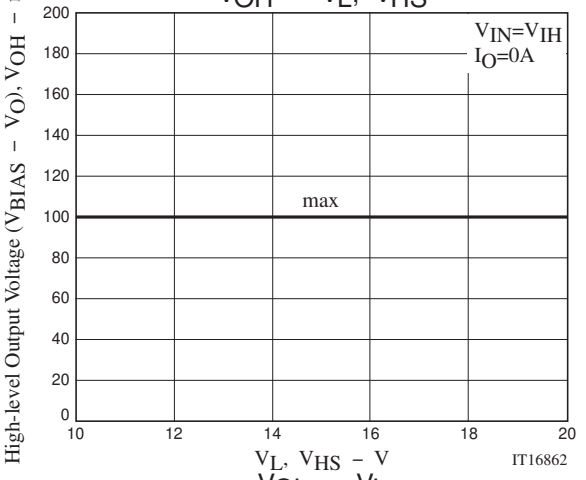
V_{IL} -- V_L



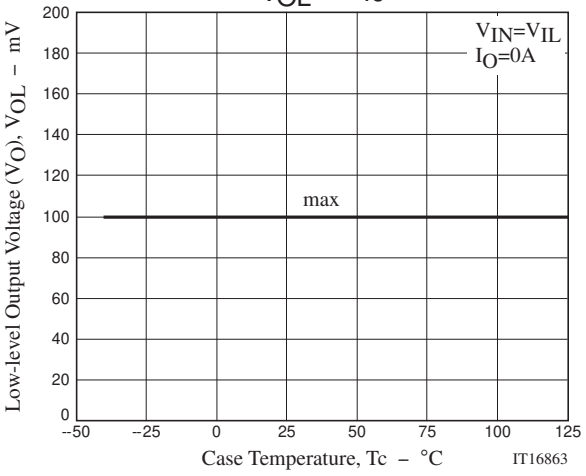
V_{OH} -- Tc



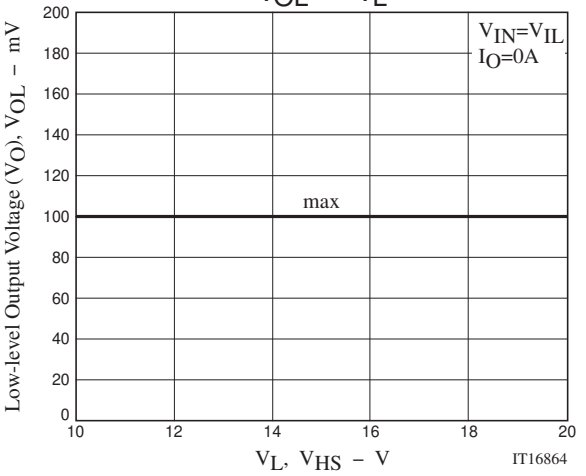
V_{OH} -- V_L, V_{HS}



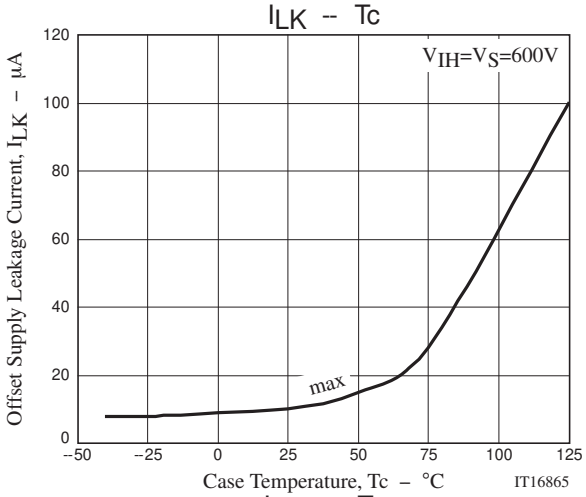
V_{OL} -- Tc



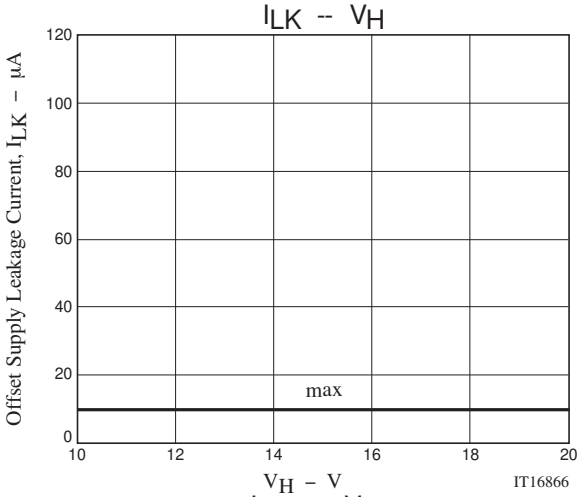
V_{OL} -- V_L



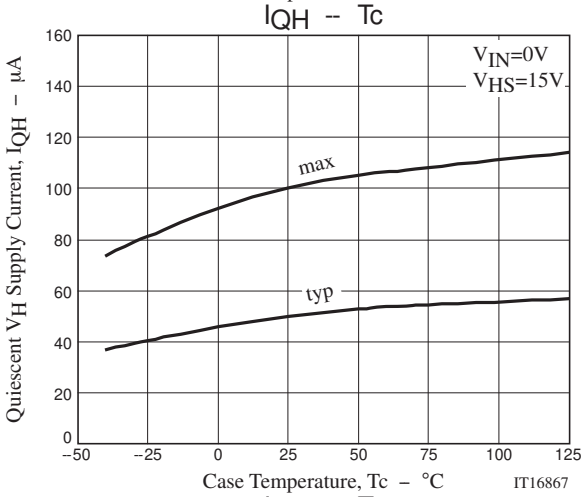
I_{LK} -- Tc



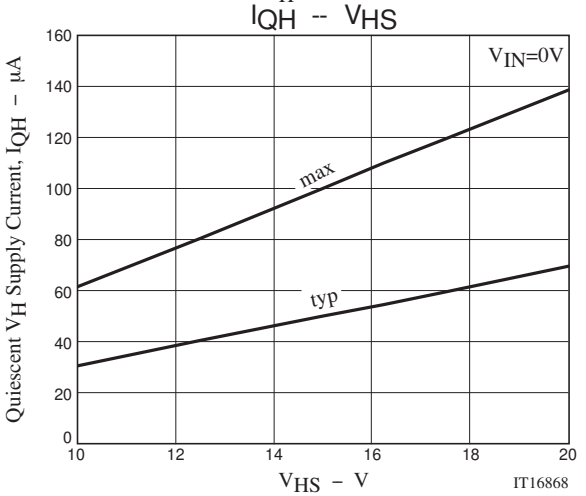
I_{LK} -- V_H



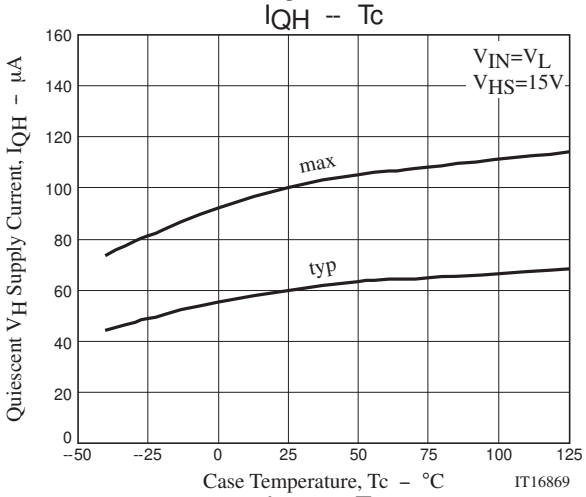
I_{QH} -- Tc



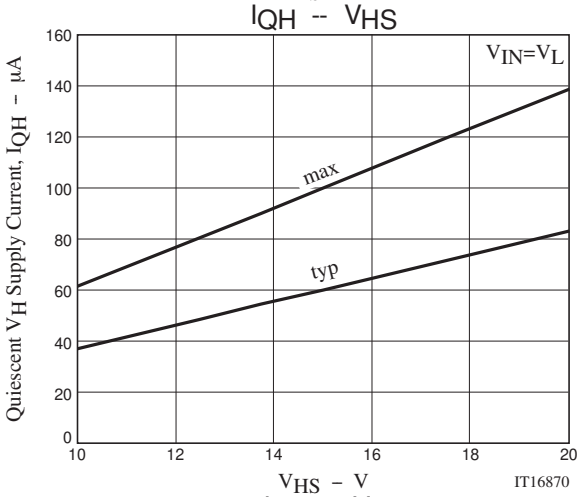
I_{QH} -- V_{HS}



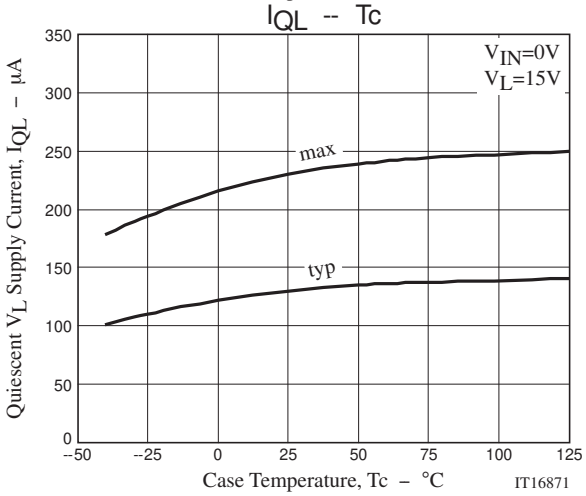
I_{QH} -- Tc



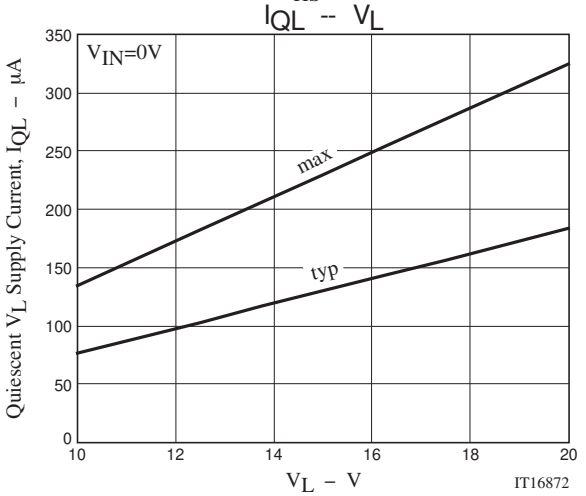
I_{QH} -- V_{HS}

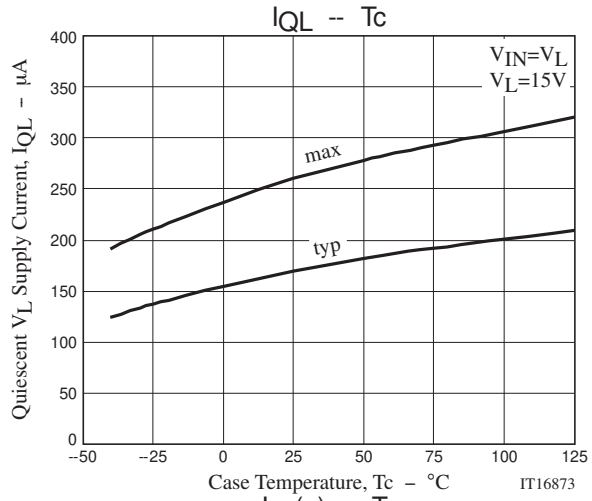


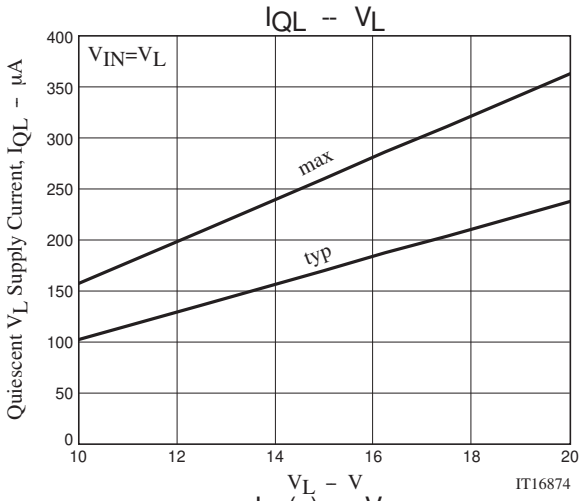
I_{QL} -- Tc

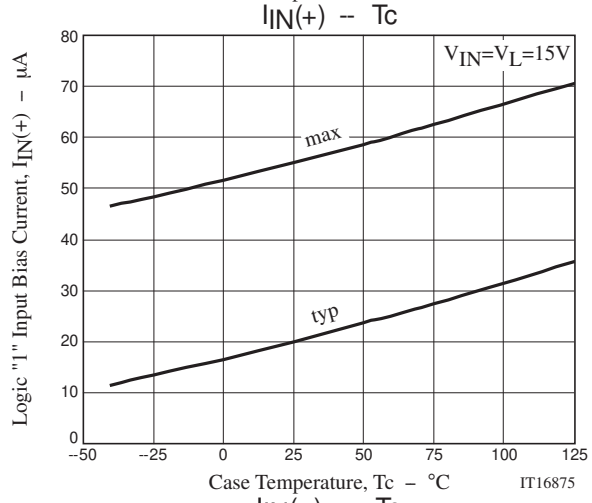


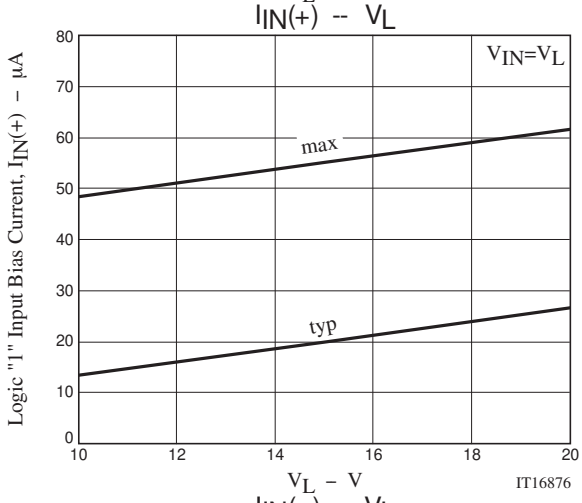
I_{QL} -- V_L

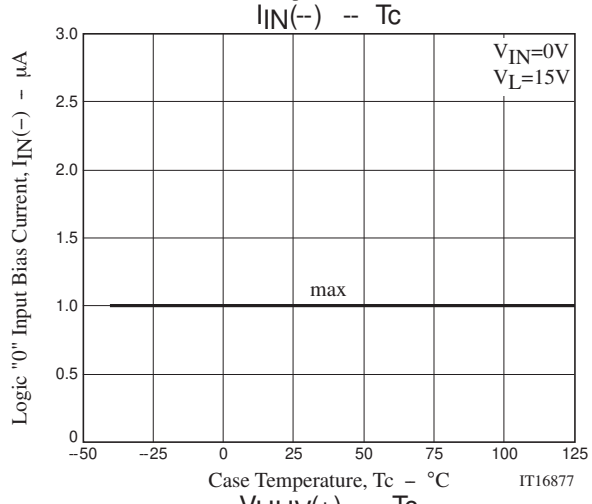


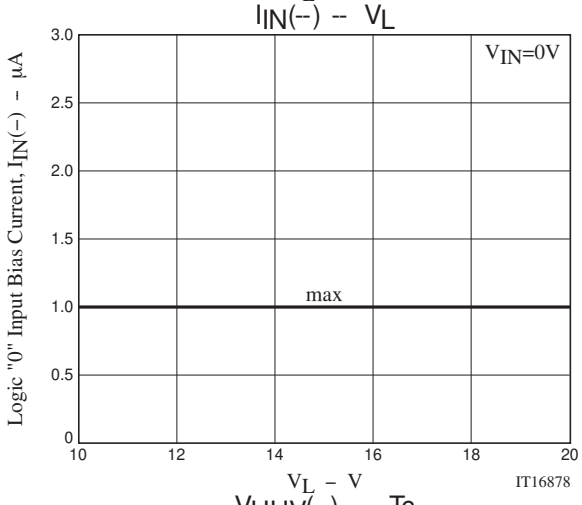

IQL -- Tc
VIN=VL
VL=15V
max
typ
Quiescent VL Supply Current, IQL – µA
Case Temperature, Tc – °C
IT16873

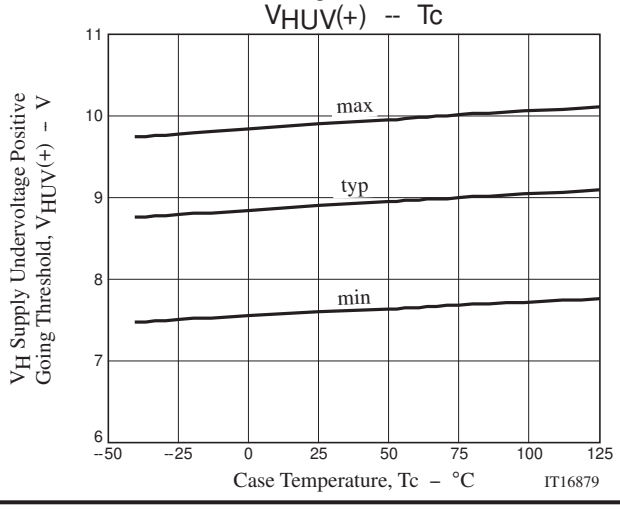

IQL -- VL
VIN=VL
max
typ
Quiescent VL Supply Current, IQL – µA
VL – V
IT16874

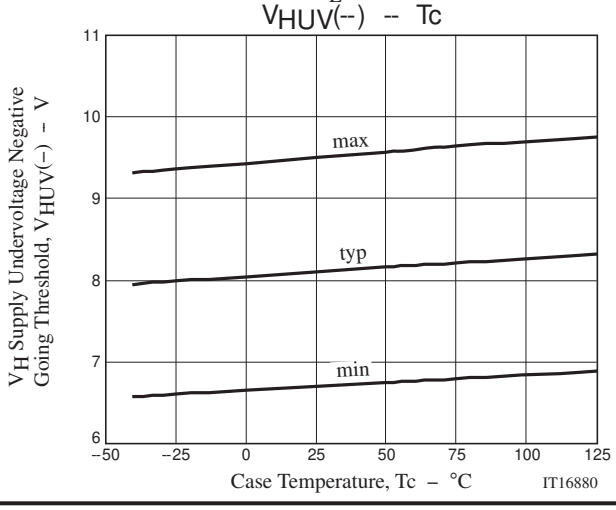

IIN(+) -- Tc
VIN=VL=15V
max
typ
Logic "1" Input Bias Current, IIN(+) – µA
Case Temperature, Tc – °C
IT16875


IIN(+) -- VL
VIN=VL
max
typ
Logic "1" Input Bias Current, IIN(+) – µA
VL – V
IT16876

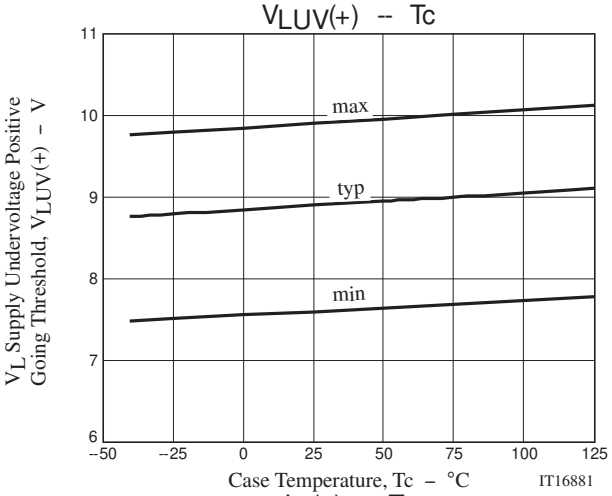

IIN(--) -- Tc
VIN=0V
VL=15V
max
Logic "0" Input Bias Current, IIN(–) – µA
Case Temperature, Tc – °C
IT16877


IIN(--) -- VL
VIN=0V
max
Logic "0" Input Bias Current, IIN(–) – µA
VL – V
IT16878

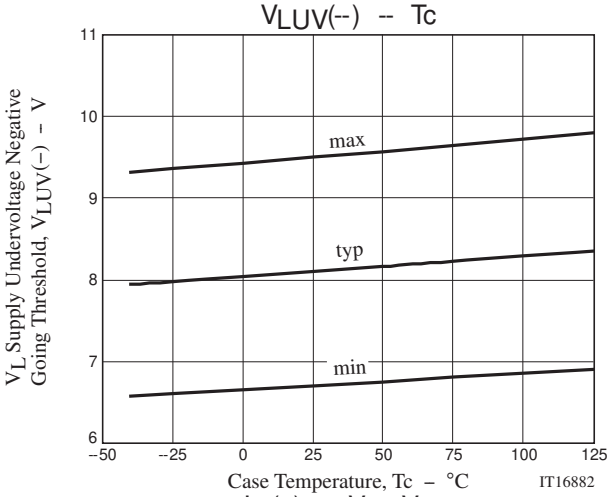

VHUV(+) -- Tc
max
typ
min
VH Supply Undervoltage Positive Going Threshold, VHUV(+) – V
Case Temperature, Tc – °C
IT16879


VHUV(--) -- Tc
max
typ
min
VH Supply Undervoltage Negative Going Threshold, VHUV(–) – V
Case Temperature, Tc – °C
IT16880

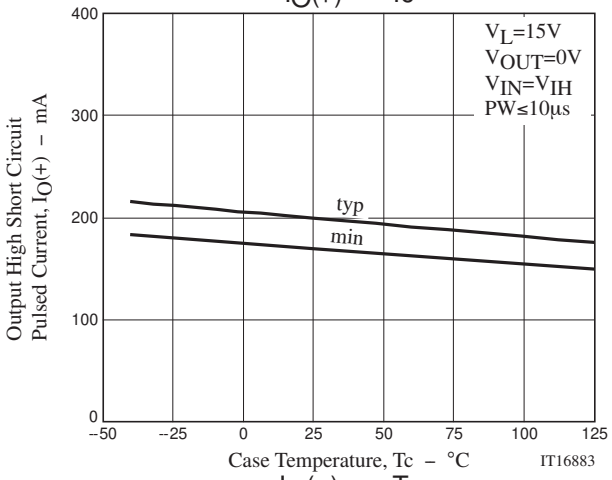
$V_{LUV(+)}$ -- Tc



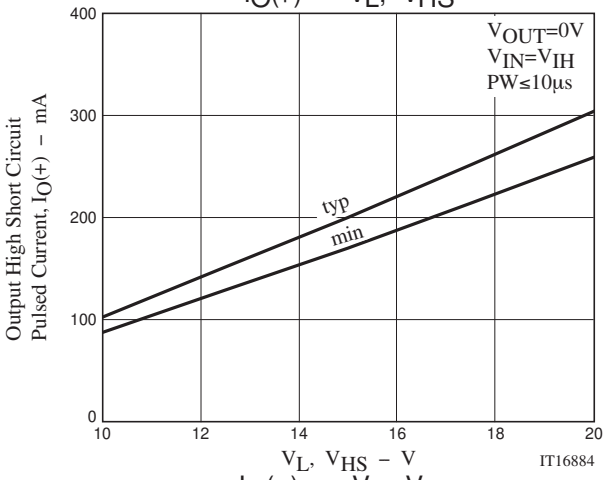
$V_{LUV(--)}$ -- Tc



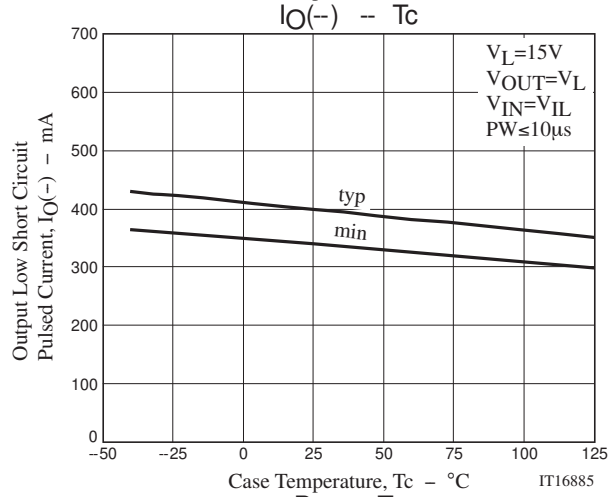
$I_{O(+)}$ -- Tc



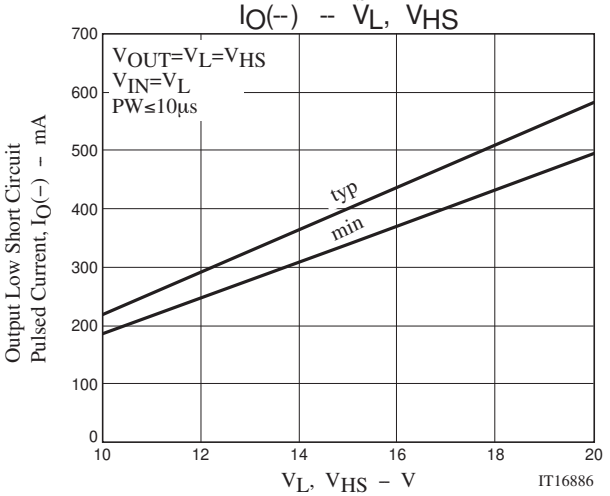
$I_{O(+)}$ -- V_L, V_{HS}



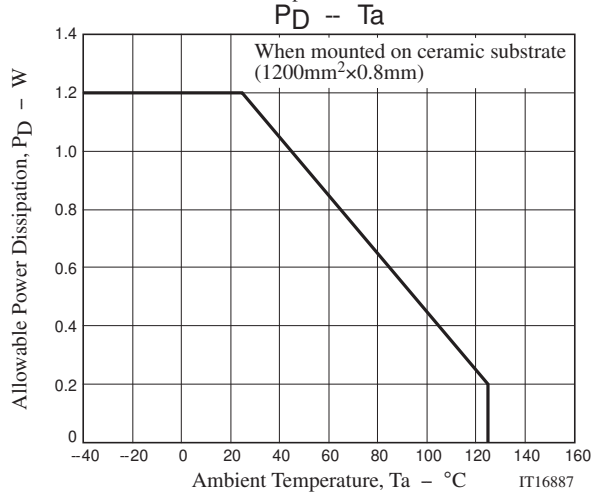
$I_{O(--)}$ -- Tc



$I_{O(--)}$ -- V_L, V_{HS}



P_D -- Ta



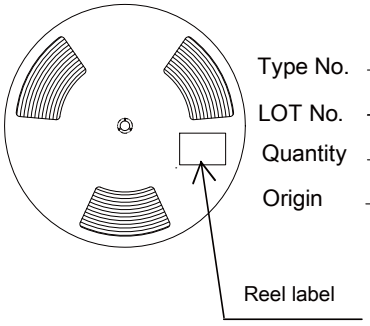
Taping Specification

TND525SS-TL-2H

1. Packing Format

Package Name	Carrier Tape Type	Maximum Number of devices contained (pcs)			Packing format	
		Reel	Inner box	Outer box	Inner BOX W206-112	Outer BOX W207-124
SOIC8	B202-101	2,500	12,500	25,000	5 reels contained Dimensions :mm(external) 340×95×340	2 inner boxes contained Dimensions :mm(external) 360×210×375

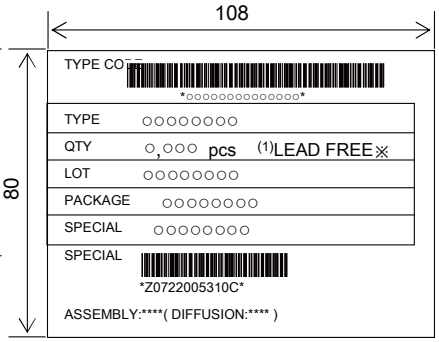
Packing method



Reel label,Inner box label
(unit: mm)

NOTE(1)
The LEAD FREE 4 description shows that it is complete lead free.

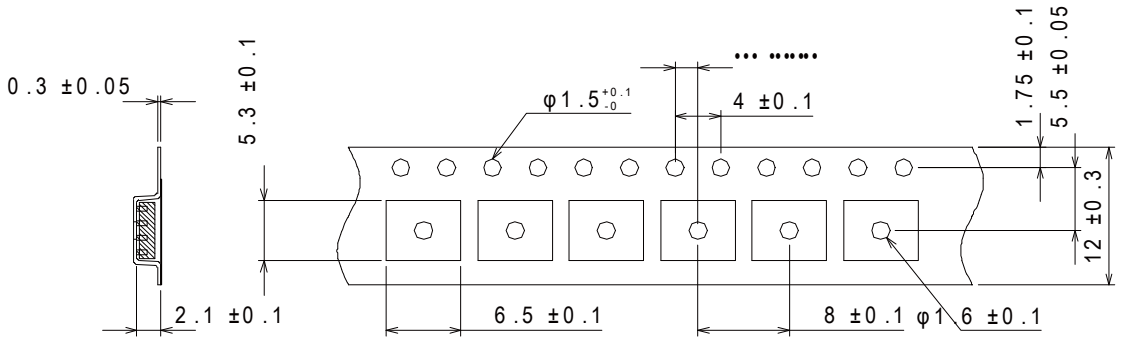
Outer box label
It is a label at the time of factory shipments.
The form of a label may change in physical distribution process.



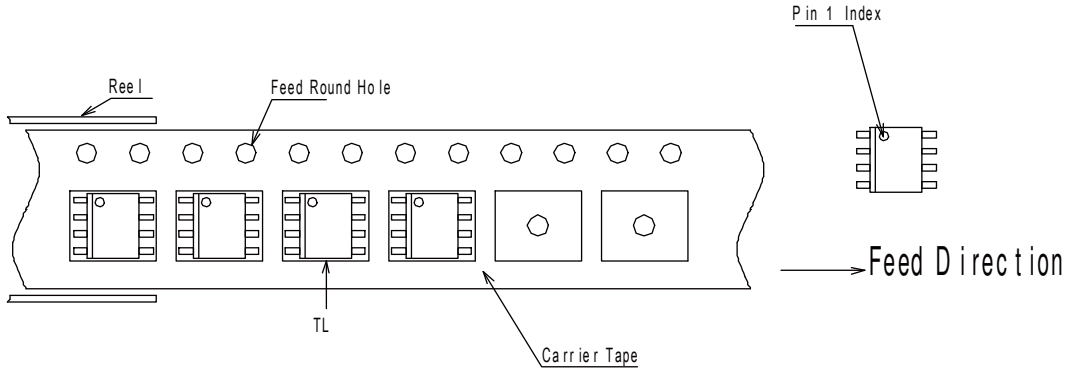
Label	JEITA Phase
LEAD FREE 4	JEITA Phase 3

2. Taping configuration

2-1. Carrier tape size (unit: mm)

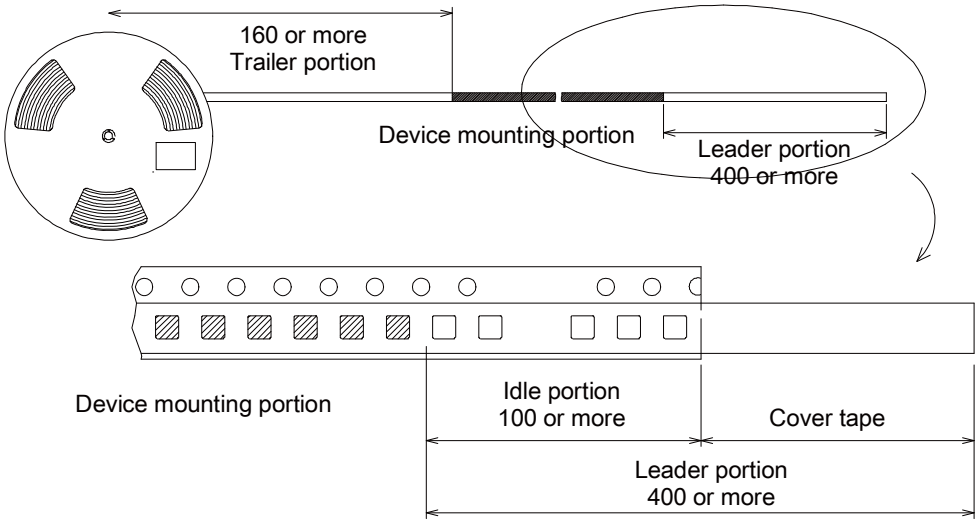


2-2. Device placement direction



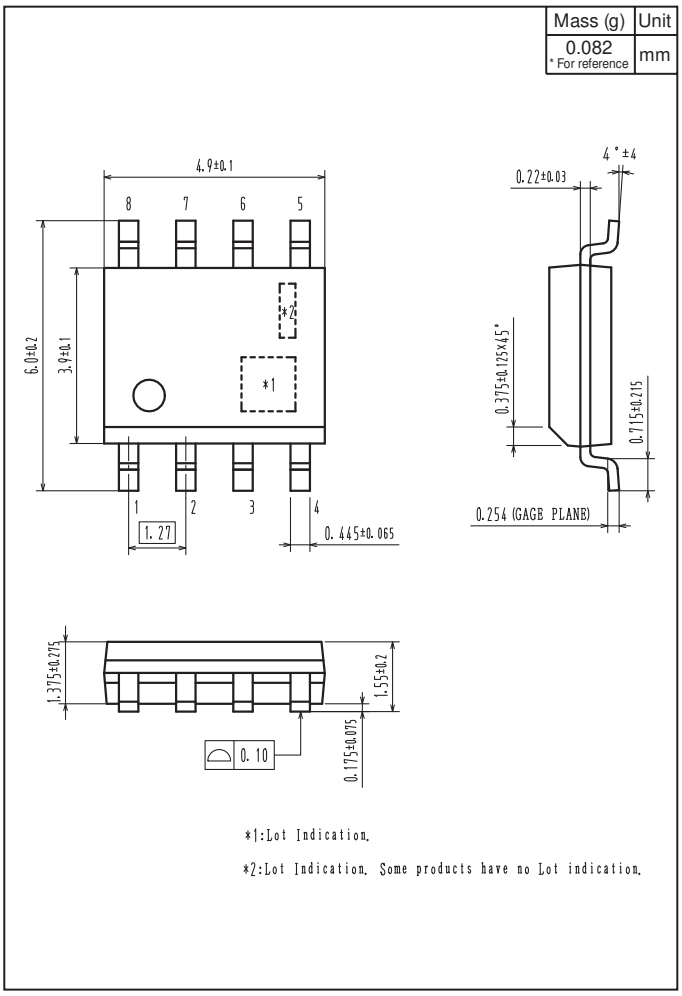
Packing type·····TL

2-3. Leader portion and trailer portion (unit: mm)



Outline Drawing

TND525SS-TL-2H



Land Pattern Example