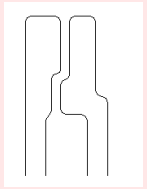
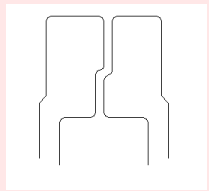
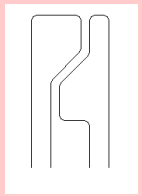
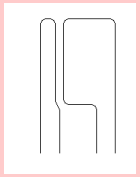
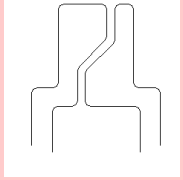
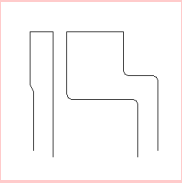
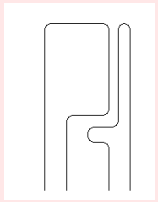
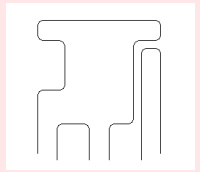
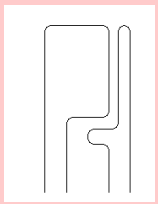
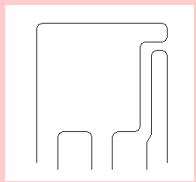
- Manufacturing site change schedule

Package	Current Product Name	Product Name after change	ES	CS, MP
SO4	TLP290(*, E(O	TLP290(*, SE(T	2013/April	2013/June
	TLP291(*, E(O	TLP291(*, SE(T	2013/April	2013/May
SO6	TLP184(*, E(O	TLP184(*, SE(T	2013/April	2013/June
	TLP185(*, E(O	TLP185(*, SE(T	2013/March	2013/May

Change point-1 (Frame design)

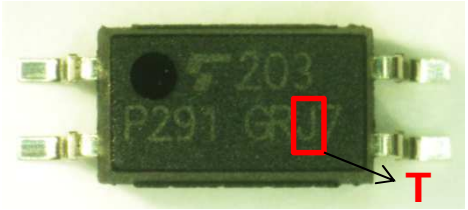
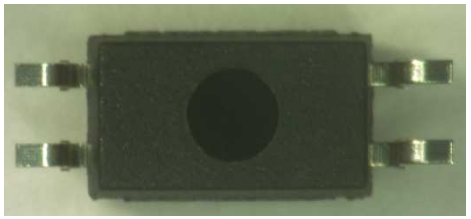
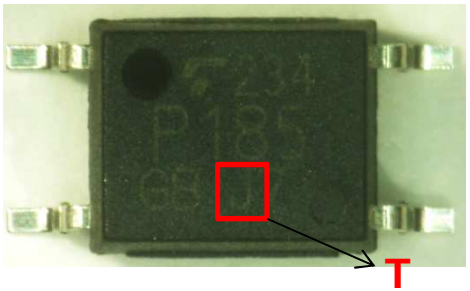
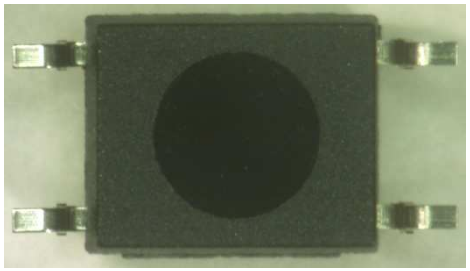
		SO4		SO6	
		TLP290 (AC type)	TLP291 (DC type)	TLP184 (AC type)	TLP185 (DC type)
Input side	Before				
	After				
Output side	Before				
	After				

- **Inner frame design is changed. There is no change in lead shape and dimension.**

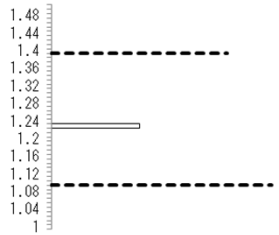
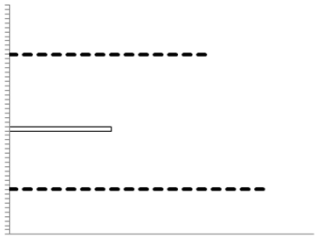
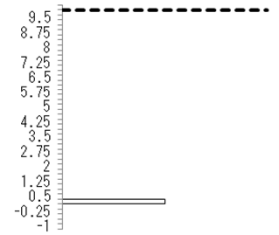
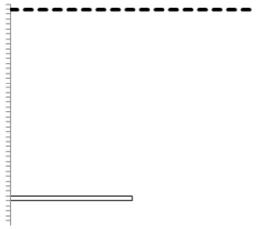
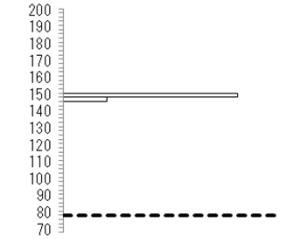
Change point-2 (CTR upper limit)

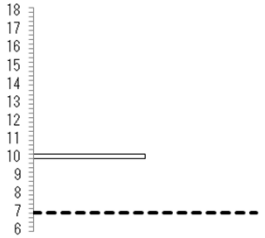
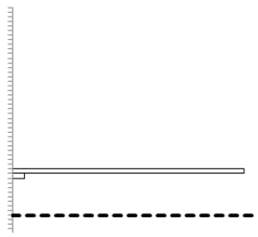
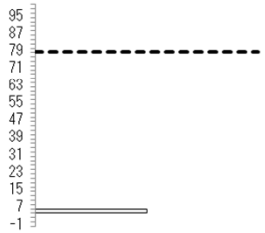
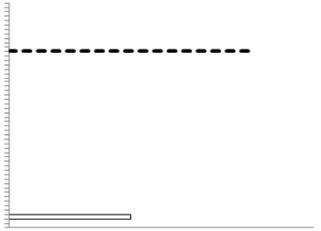
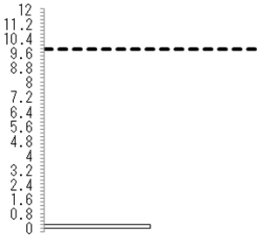
CTR rank	TLP290 (AC type)				TLP291 (DC type)				TLP184 (AC type)				TLP185 (DC type)			
	Before		After		Before		After		Before		After		Before		After	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
No rank	50	400	50	600	50	400	50	600	50	400	50	600	50	400	50	600
Y	50	150	50	150	50	150	50	150	50	150	50	150	50	150	50	150
GR	100	300	100	300	100	300	100	300	100	300	100	300	100	300	100	300
BL	–	–	200	600	–	–	200	600	–	–	200	600	–	–	200	600
GB	100	400	100	600	100	400	100	600	100	400	100	600	100	400	100	600
YH	–	–	–	–	75	150	75	150	–	–	–	–	75	150	75	150
GRL	–	–	–	–	100	200	100	200	–	–	–	–	100	200	100	200
GRH	–	–	–	–	150	300	150	300	–	–	–	–	150	300	150	300
BLL	200	400	200	400	200	400	200	400	200	400	200	400	200	400	200	400

Change point-3 (Product spec)

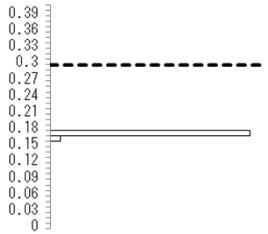
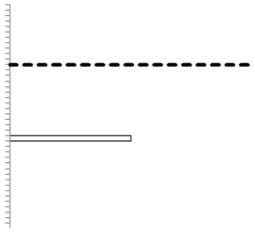
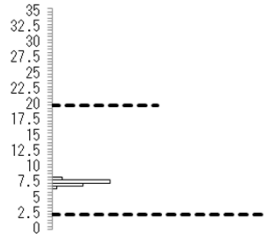
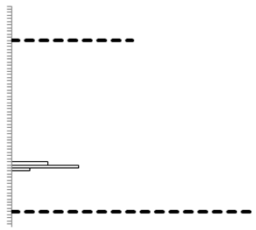
Product Marking	PKG	■ Top surface There is no change in the marking of product name. Thailand product is indicated with “T” (Country of Origin).	■ Backside There is no change from the domestic product.
	SO4		
	SO6		
Machine	Machine which is used in Japan is transferred to Thailand company. After setting up the machine, the production starts.		
Material	There is no change from the domestic products, except for inner lead design of lead frame.		

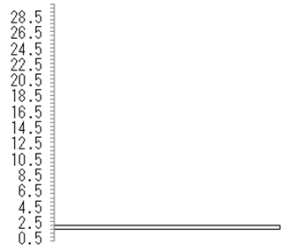
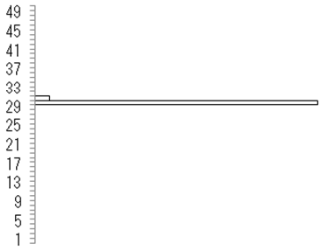
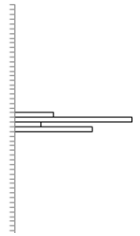
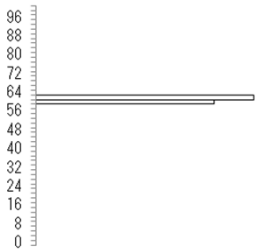
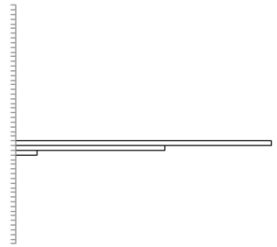
(Reference) Characteristics comparison：TLP185 vs. TLP185(SE

	TLP185	TLP185(SE
VF (@IF=10mA)		
IR (@VR=5V)		
VCEO (@Ic=0.5mA)		

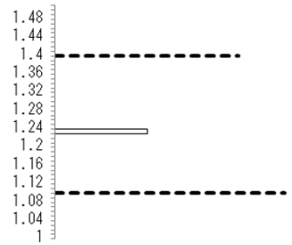
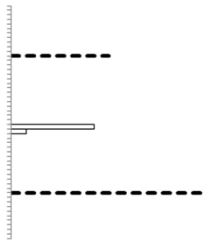
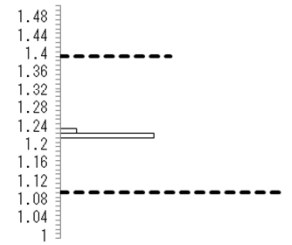
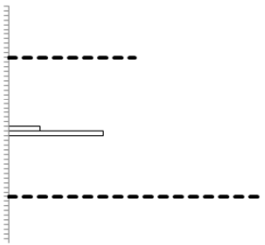
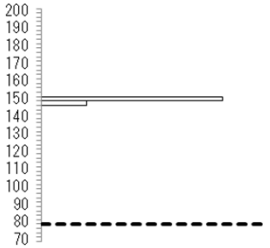
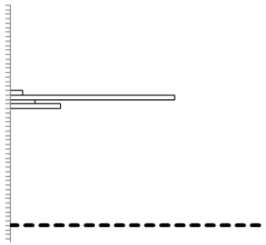
	TLP185	TLP185(SE
VECO (@IE-0.1mA)		
ICEO (@VCE=48V)		
IC（OFF） (@VF=0.7V, VCE=48V)		

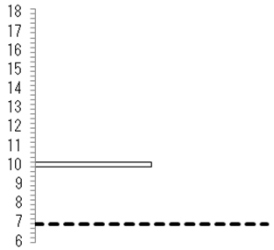
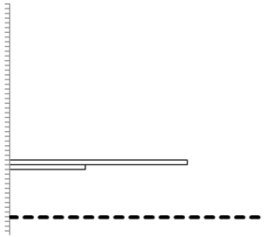
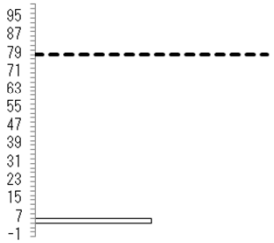
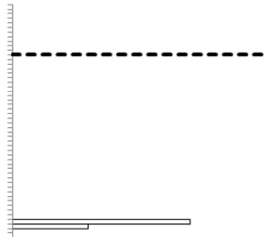
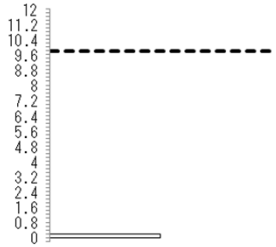
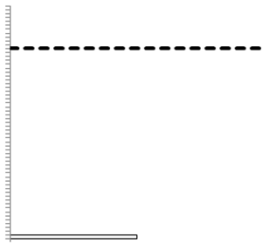
(Reference) Characteristics comparison：TLP185 vs. TLP185(SE

	TLP185	TLP185(SE
VCE（sat） (@Ic=2.4mA, IF=8mA)		
IC+ (@VCE=5V, IF=5mA)		

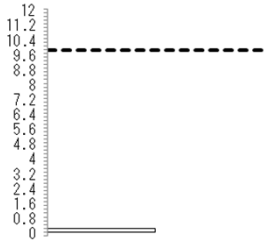
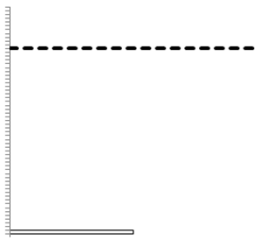
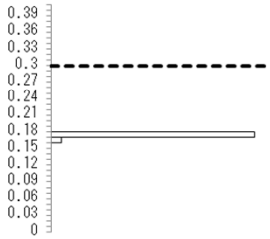
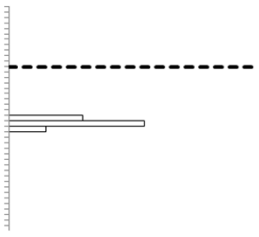
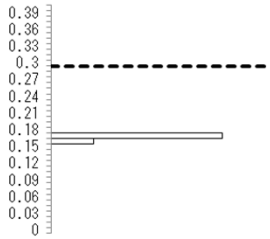
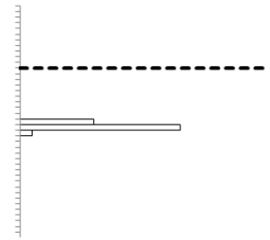
	TLP185	TLP185(SE
tON (@IF=16mA, Vcc=5V, RL=1.9kΩ)		
ts (@IF=16mA, Vcc=5V, RL=1.9kΩ)		
tOFF (@IF=16mA, Vcc=5V, RL=1.9kΩ)		

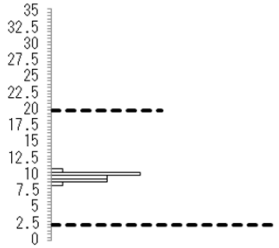
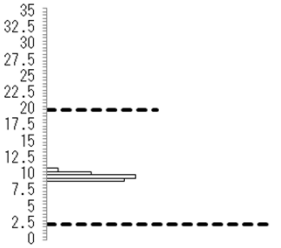
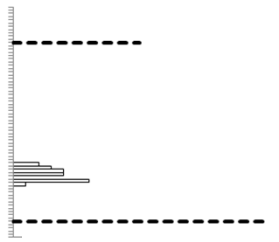
(Reference) Characteristics comparison：TLP184 vs. TLP184(SE

	TLP184	TLP184(SE
VF+ (@IF=10mA)		
VF- (@IF=-10mA)		
VCEO (@Ic=0.5mA)		

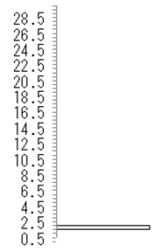
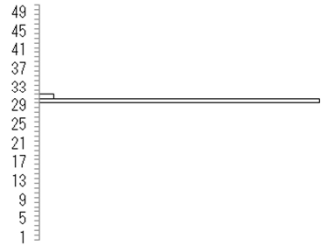
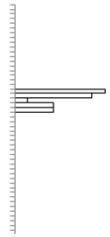
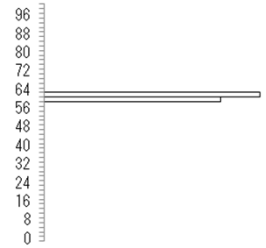
	TLP184	TLP184(SE
VECO (@IE=-0.1mA)		
ICEO (@VCE=48V)		
IC(OFF)+ (@VF=0.7V, VCE=-48V)		

(Reference) Characteristics comparison：TLP184 vs. TLP184(SE

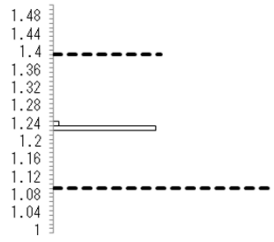
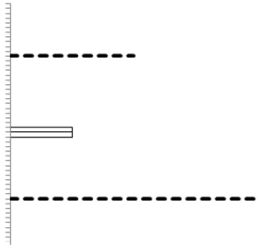
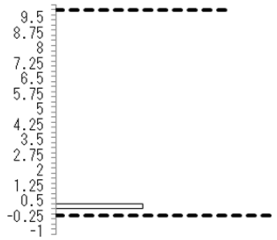
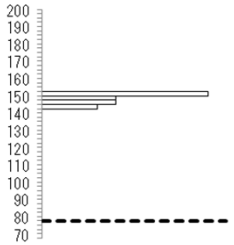
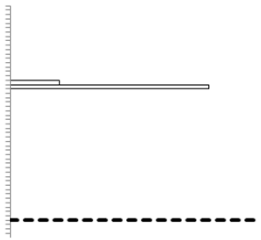
	TLP184	TLP184(SE
IC（OFF）- (@VF=0.7V, VCE=-48V)		
VCE（sat） (@Ic=2.4mA, IF=8mA)		
VCE（sat)- (@Ic=2.4mA, IF=8mA)		

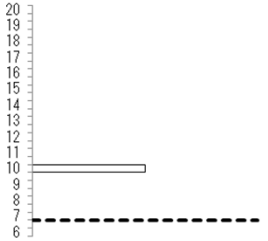
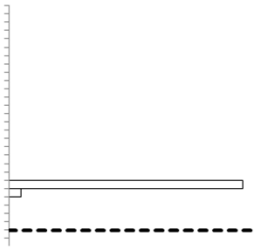
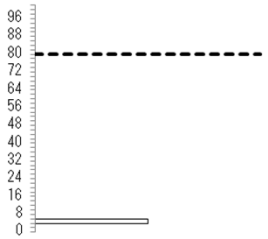
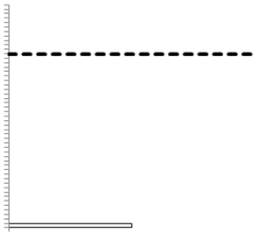
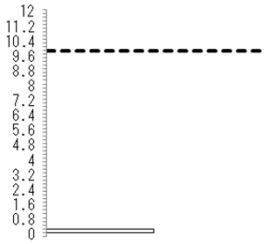
	TLP184	TLP184(SE
IC+ (@VCE=5V, IF=5mA)		
IC- (@VCE=5V, IF=-5mA)		

(Reference) Characteristics comparison：TLP184 vs. TLP184(SE

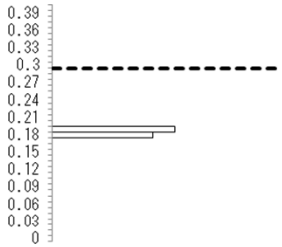
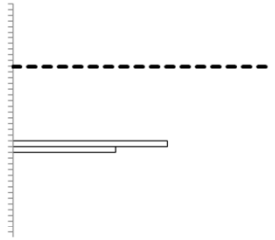
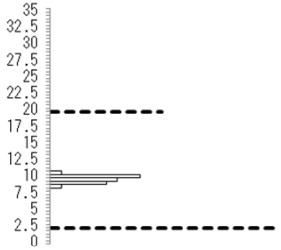
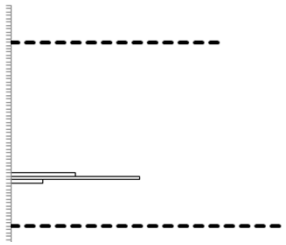
	TLP184	TLP184(SE
tON (@IF=16mA, Vcc=5V, RL=1.9kΩ)		
ts (@IF=16mA, Vcc=5V, RL=1.9kΩ)		
tOFF (@IF=16mA, Vcc=5V, RL=1.9kΩ)		

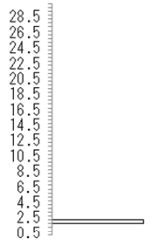
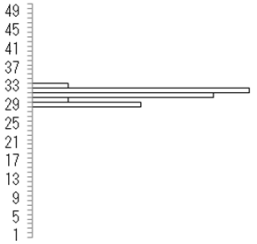
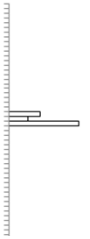
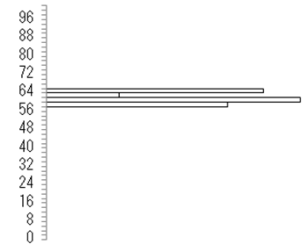
(Reference) Characteristics comparison：TLP291 vs. TLP291(SE

	TLP291	TLP291(SE
VF (@IF=10mA)		
IR (@VR=5V)		
VCEO (@Ic=0.5mA)		

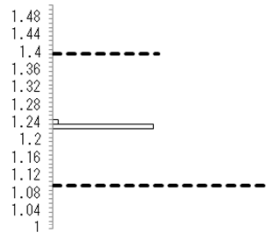
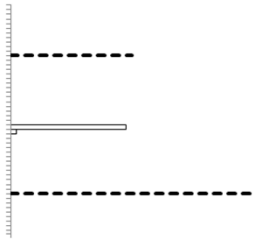
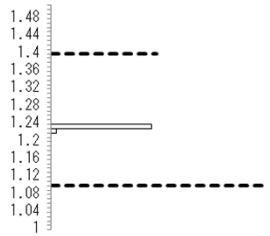
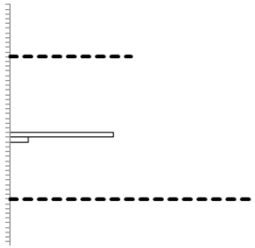
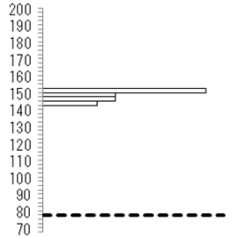
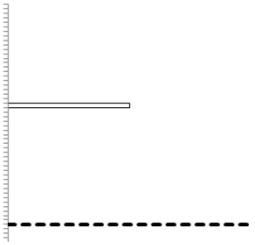
	TLP291	TLP291(SE
VECO (@IE-0.1mA)		
ICEO (@VCE=48V)		
IC（OFF） (@VF=0.7V, VCE=48V)		

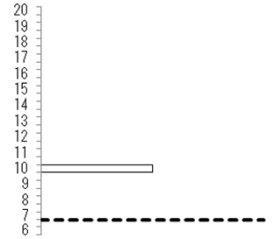
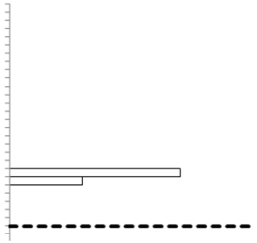
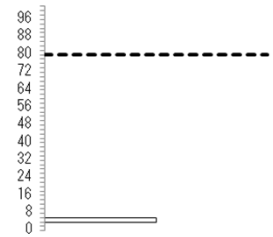
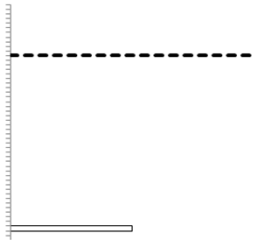
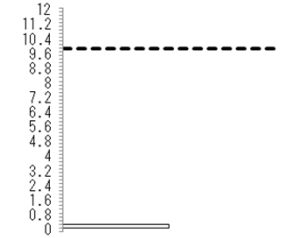
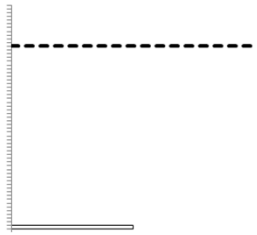
(Reference) Characteristics comparison：TLP291 vs. TLP291(SE

	TLP291	TLP291(SE
VCE（sat) (@Ic=2.4mA, IF=8mA)		
IC+ (@VCE=5V, IF=5mA)		

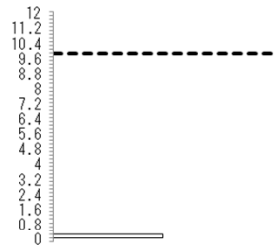
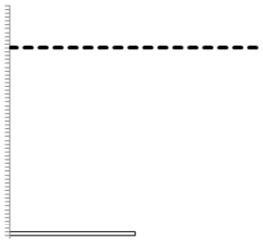
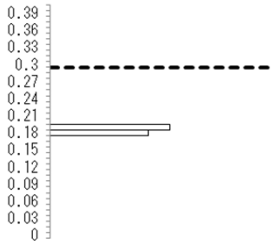
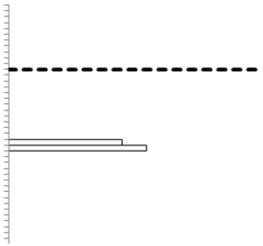
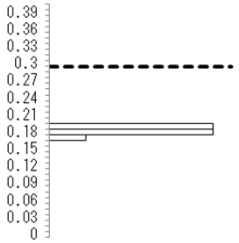
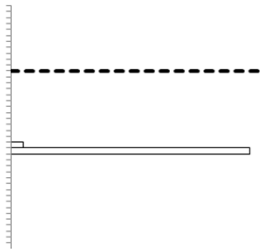
	TLP291	TLP291(SE
tON (@IF=16mA, Vcc=5V, RL=1.9kΩ)		
ts (@IF=16mA, Vcc=5V, RL=1.9kΩ)		
tOFF (@IF=16mA, Vcc=5V, RL=1.9kΩ)		

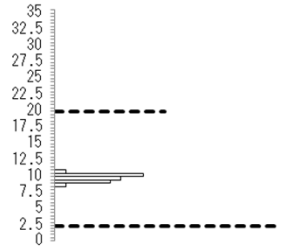
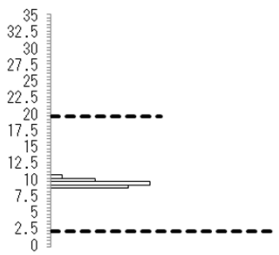
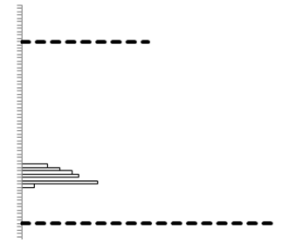
(Reference) Characteristics comparison：TLP290 vs. TLP290(SE

	TLP290	TLP290(SE
VF+ (@IF=10mA)		
VF- (@IF=-10mA)		
VCEO (@Ic=-0.5mA)		

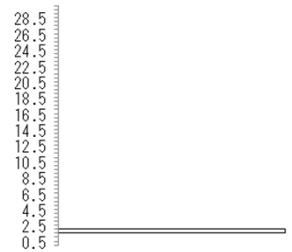
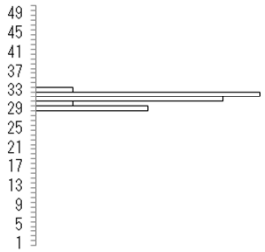
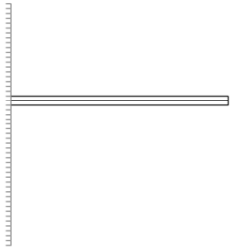
	TLP290	TLP290(SE
VECO (@IE=-0.1mA)		
ICEO (@VCE=48V)		
IC(OFF)+ (@VF=0.7V, VCE=-48V)		

(Reference) Characteristics comparison：TLP290 vs. TLP290(SE

	TLP290	TLP290(SE
IC(OFF)- (@VF=0.7V, VCE=-48V)		
VCE(sat) (@Ic=2.4mA, IF=8mA)		
VCE(sat)- (@Ic=2.4mA, IF=8mA)		

	TLP290	TLP290(SE
IC+ (@VCE=5V, IF=5mA)		
IC- (@VCE=5V, IF=-5mA)		

(Reference) Characteristics comparison：TLP290 vs. TLP290(SE

	TLP290	TLP290(SE
tON (@IF=16mA, Vcc=5V, RL=1.9kΩ)		
ts (@IF=16mA, Vcc=5V, RL=1.9kΩ)		
tOFF (@IF=16mA, Vcc=5V, RL=1.9kΩ)