

MAXIMUM RATINGS (Ta=25°C)

CHARACTERISTIC		SYMBOL	RATING	UNIT
LED	Forward Current	I _F	60	mA
	Forward Current Derating (Ta ≥ 39°C)	ΔI _F /°C	-0.7	mA/°C
	Peak Forward Current (100μs pulse, 100pps)	I _{FP}	1	A
	Power Dissipation	P _D	100	mW
	Power Dissipation Derating (Ta ≥ 25°C)	ΔP _D /°C	-1.0	mW/°C
	Reverse Voltage	V _R	5	V
	Junction Temperature	T _j	125	°C
DETECTOR	Collector-Emitter Voltage	V _{CEO}	80	V
	Collector-Base Voltage (TLP635)	V _{CBO}	80	V
	Emitter-Collector Voltage	V _{ECO}	7	V
	Emitter-Base Voltage (TLP635)	V _{EBO}	7	V
	Collector Current	I _C	50	mA
	Power Dissipation	P _C	150	mW
	Power Dissipation Derating (Ta ≥ 25°C)	ΔP _C /°C	-1.5	mW/°C
	Junction Temperature	T _j	125	°C
Storage Temperature Range		T _{stg}	-55~150	°C
Operating Temperature Range		T _{opr}	-55~100	°C
Lead Soldering Temperature (10 sec.)		T _{solid}	260	°C
Total Package Power Dissipation		P _T	250	mW
Total Package Power Dissipation Derating (Ta ≥ 25°C)		ΔP _T /°C	-2.5	mW/°C
Isolation Voltage (AC, 1 min., RH ≤ 60%)		BV _S	5000	V _{rms}

TLP635, 636

INDIVIDUAL ELECTRICAL CHARACTERISTICS (Ta=25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
LED	Forward Voltage	V _F	I _F =10mA	1.0	1.15	1.3	V
	Reverse Current	I _R	V _R =5V	-	-	10	μA
	Capacitance	C _T	V=0, f=1MHz	-	30	-	pF
DETECTOR	Collector-Emitter Breakdown Voltage	V(BR) _{CEO}	I _C =0.5mA	30	-	-	V
	Emitter-Collector Breakdown Voltage	V(BR) _{ECO}	I _E =0.1mA	7	-	-	V
	Collector-Base Breakdown Voltage (TLP635)	V(BR) _{CBO}	I _C =0.1mA	80	-	-	V
	Emitter-Base Breakdown Voltage (TLP635)	V(BR) _{EBO}	I _E =0.1mA	7	-	-	V
	Collector Dark Current	I _{CEO}	V _{CE} =24V	-	10	100	nA
			V _{CE} =24V, Ta=85°C	-	2	50	μA
	Collector Dark Current (TLP635)	I _{CER}	V _{CE} =24V, Ta=85°C R _{BE} =1MΩ	-	0.5	10	μA
	Collector Dark Current (TLP635)	I _{CBO}	V _{CB} =10V	-	0.1	-	nA
	DC Forward Current Gain (TLP635)	h _{FE}	V _{CE} =5V, I _C =0.5mA	-	400	-	-
	Capacitance (Collector to Emitter)	C _{CE}	V=0, f=1MHz	-	10	-	pF

COUPLED ELECTRICAL CHARACTERISTICS (Ta=25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Current Transfer Ratio	I _C /I _F	I _F =5mA, V _{CE} =5V Rank GB	50	-	600	%
			100	-	600	
Saturated CTR	I _C /I _F (sat)	I _F =1mA, V _{CE} =0.4V Rank GB	-	60	-	%
			30	-	-	
Base Photo-Current (TLP635)	I _{pB}	I _F =5mA, V _{CB} =5V	-	10	-	μA
Collector-Emitter Saturation Voltage	V _{CE} (sat)	I _C =2.4mA, I _F =8mA I _C =0.2mA, I _F =1mA Rank GB	-	-	0.4	V
			-	0.2	-	
			-	-	0.4	

ISOLATION CHARACTERISTICS (Ta=25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Capacitance (Input to Output)	CS	V _S =0, f=1MHz	-	0.8	-	pF
Isolation Resistance	RS	V _S =500V	5×10 ¹⁰	10 ¹⁴	-	Ω
Isolation Voltage	BV _S	AC, 1 minute	5000	-	-	V _{rms}
		AC, 1 second	-	10000	-	
		DC, 1 minute	-	10000	-	V _{dc}

SWITCHING CHARACTERISTICS (Ta=25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Rise Time	t _r	V _{CC} =10V I _C =2mA R _L =100Ω	-	2	-	μs
Fall Time	t _f		-	3	-	
Turn-on Time	t _{on}		-	3	10	
Turn-off Time	t _{off}		-	3	10	
Turn-on Time	t _{ON}	R _L =1.9kΩ (Fig.1)	-	2	-	μs
Storage Time	t _S	R _{BE} =OPEN	-	15	-	
Turn-off Time	t _{OFF}	V _{CC} =5V, I _F =16mA	-	25	-	
Turn-on Time	t _{ON}	R _L =1.9kΩ (Fig.1)	-	2	-	μs
Storage Time	t _S	R _{BE} =220kΩ (TLP635)	-	12	-	
Turn-off Time	t _{OFF}	V _{CC} =5V, I _F =16mA	-	20	-	

RECOMMENDED OPERATING CONDITIONS

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT
Supply Voltage	V _{CC}	-	5	24	V
Forward Current	I _F	-	16	25	mA
Collector Current	I _C	-	1	10	mA
Operating Temperature	T _{opr}	-25	-	85	°C

Fig. 1 SWITCHING TIME TEST CIRCUIT









