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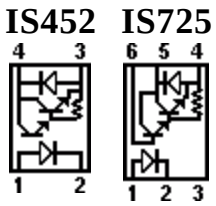
IS452, IS725: DARLINGTON OPTOCOUPLER

Circuit



Features

Low Input Current Requirement of 1 mA
High Isolation Voltage
High CTR 1000% Min

100% Test on Electrical Parameters

Description

The IS725 consists of a Gallium Arsenide Infrared emitting diode coupled with a silicon photodarlington which has an integral base-emitter resistor to optimise the switching speed in a dual in-line package. Surface Mount Option Available.

Applications

Telecommunications, Modem, Data Systems, Switch Mode Power Supplies, Telephone Systems.

Absolute Maximum Ratings (Ta=25°C)

Storage Temperature:	-55°C to +150°C
Operating Temperature:	-55°C to +100°C
Lead Soldering:	260°C for 10s, 1.6mm from case
Input-to-Output Isolation Test Voltage:	±4000 Vrms (Transient Overvoltage, t=10s)

Output

Collector-emitter voltage BV_{CEO}:	100V
Emitter-base voltage BV_{EBO}:	7V
Collector Dark Current:	100nA
Power Dissipation:	300/500mW
Derate Linearly:	2.00mW/°C above 25°C

Infrared Emitting Diode

Power Dissipation:	100mW
Derate Linearly:	2.00mW/°C above 25°C
Input Current (RMS):	60mA
Input Current (Peak):	±0.5A

Individual Electrical Characteristics (Ta=25°C)

C_t	Terminal Capacitance	f=1MHz, V=0	-50			pF
V_F	Forward Voltage	I_F=±10mA	30	1.2	1.5	V
I_R	Reverse Current	V_R=4V			10	µA
OUTPUT						
BV_{CEO}	Collector-emitter Voltage	I_C=1mA	100			V
BV_{ECO}	Emitter-collector Voltage	I_E=0.1mA	7			V
I_{CEO}	Collector-emitter Dark Current	V_{CE}=20V, I_F=0			100	nA
COUPLED	**PARAMETER**	**CONDITIONS**	**MIN**	**TYP**	**MAX**	**UNIT**
I_C/I_F	DC Current Transfer Ratio	I_F=±10mA, V_{CE}=1V	1000			%
R_{ISO}	Input-to-output Isolation Resistance	V_{IO}=500V, RH=40~60%	100	100		Gohm
$V_{CE(SAT)}$	Collector-emitter Saturation Voltage	I_F=±10mA, I_C=0.5mA		0.75	1.0	V
C_{IO}	Capacitance Input to Output	V=0, f=1MHz			2	pF

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