



Endicott Research Group, Inc.

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# SFR3656F



## Specifications and Applications Information

11/19/08

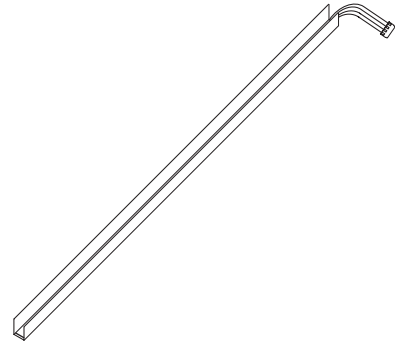
Preliminary

The ERG **Smart Force Series** of LED backlight units are specifically designed for applications which require wide dimming and LCD brightness stability. The SFR3656F is designed to provide backlighting for the Sharp LQ104V1DG51 display.

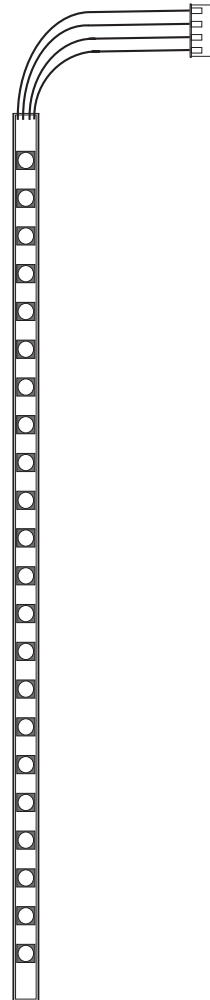
Designed, manufactured and supported within the USA, the SFR features:

- ✓ Custom rails for specific LCDs
- ✓ High dimming ratio
- ✓ One year warranty

## Smart Force LED Backlight Unit



Package Configuration

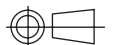


Components are shown for reference only. Actual product may differ from that shown.

### Connector Input Connector

Molex  
51021-0400

- J1-1 Cathode 1
- J1-2 Anode 1
- J1-3 Cathode 2
- J1-4 Anode 2





**Absolute Maximum Ratings** <sup>(1)</sup>

Rating	Symbol	Value	Units
Forward Current <sup>(2)</sup>	$I_F$	150	mA
Pulse Forward Current <sup>(2) (3)</sup>	$I_P$	300	mA
Component Surface Temperature	$T_s$	-40 to +130	°C
Storage Temperature	$T_{stg}$	-40 to +80	°C

**Maximum Recommended Operating Conditions**

Rating	Symbol	Value	Units
Forward Current <sup>(4) (5)</sup>	$I_F$	100	mA
Pulse Forward Current	$I_P$	200	mA
Component Surface <sup>(5)</sup> Temperature	$T_s$	-40 to +100	°C

**Electrical Characteristics**

Unless otherwise noted  $V_{in} = 48.00$  Volts dc and  $T_a = 25^\circ\text{C}$

Characteristic	Symbol	Min	Typ	Max	Units
Number of Strings	-	-	2	-	-
LED Forward Voltage	$V_F$	-	2.9	3.2	V
String voltage	$V_S$	-	32.0	35.3	V

Specifications subject to change without notice.

- (1) Operation above maximum recommended operating conditions will require thermal management actions and will decrease LED lifetime.
- (2) Current is specified per string.
- (3) Maximum duty cycle is 50% for pulsed current drive at 200mA, pulse width  $\leq 10\text{ms}$ .
- (4) Strings are to be driven with a current source.
- (5) Operation at or below the maximum recommended component surface temperature and forward current rating allows presumption of a 60,000 hour LED lifetime. (Lifetime is time to 70% Lumen maintenance)



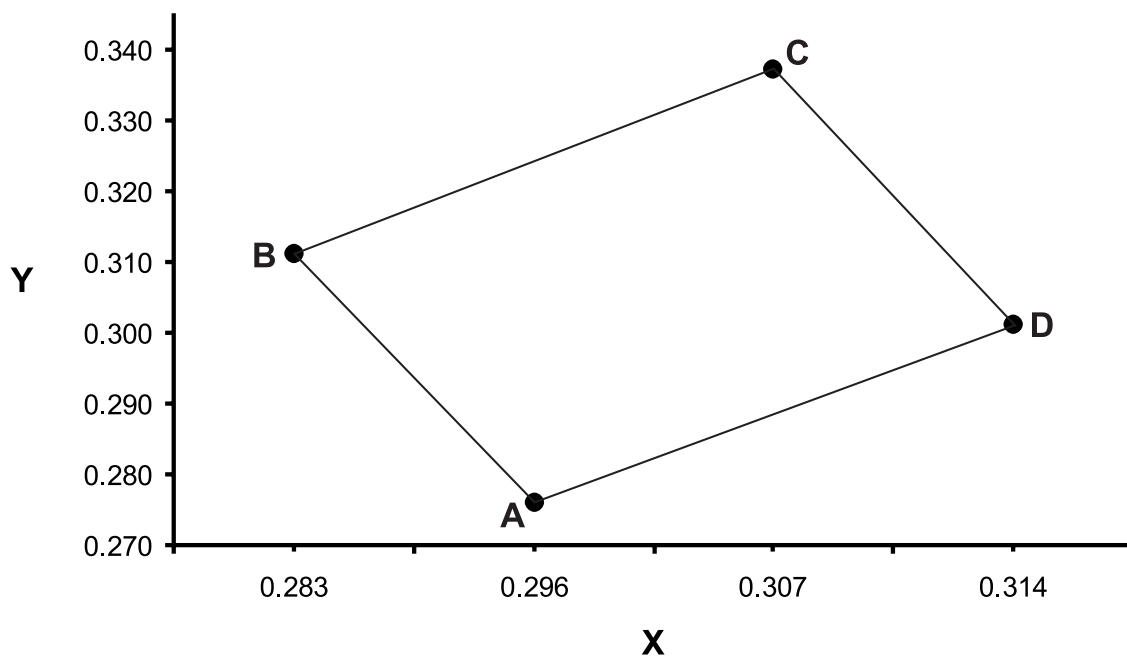
## Backlight Chromaticity Coordinate Boundaries <sup>(1)</sup>

(Ta = 25°C)

	A	B	C	D
X	0.296	0.283	0.307	0.314
Y	0.276	0.311	0.337	0.301

(1) Each column (A, B, C and D) represents an X,Y coordinate on the CIE 1931 chromaticity diagram.

CIE 1931 CHROMATICITY DIAGRAM



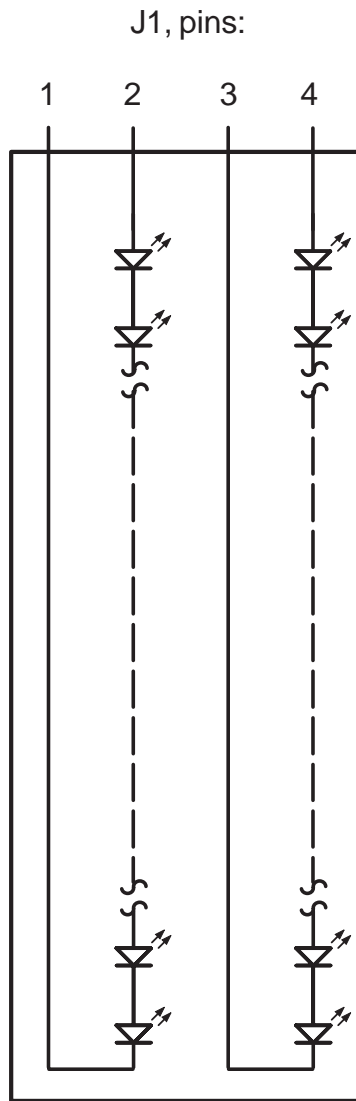


Figure 1  
SFR Connectivity



Endicott Research Group, Inc. (ERG) reserves the right to make changes in circuit design and/or specifications at any time without notice. Accordingly, the reader is cautioned to verify that data sheets are current before placing orders. Information furnished by ERG is believed to be accurate and reliable. However, no responsibility is assumed by ERG for its use.