

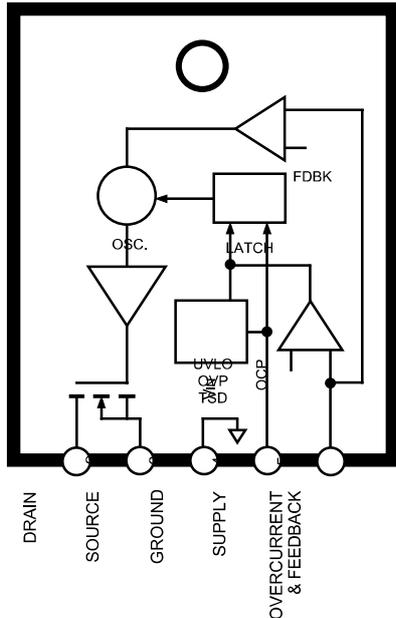
# STR-G6653

## OFF-LINE QUASI-RESONANT FLYBACK SWITCHING REGULATOR

The STR-G6653 is specifically designed to satisfy the requirements for increased integration and reliability in off-line quasi-resonant flyback converters. This device incorporates the primary control and drive circuit with a discrete avalanche-rated power MOSFET.

Cycle-by-cycle current limiting, under-voltage lockout with hysteresis, over-voltage protection, and thermal shutdown protects the power supply during the normal overload and fault conditions. Over-voltage protection and thermal shutdown are latched after a short delay. The latch may be reset by cycling the input supply. Low-current startup and a low-power standby mode selected from the secondary circuit completes a comprehensive suite of features. The device is provided in a five-pin over-molded TO-220 style package, affording dielectric isolation without compromising thermal characteristics.

Proven in substantial volumes, the STR-G6653 is a robust low-risk solution for off-line power supplies particularly where management of EMI at the source is a significant element of the system design.



Dwg. PK-011

### ABSOLUTE MAXIMUM RATINGS at $T_A = +25^\circ\text{C}$

Control Supply Voltage, $V_{IN}$ .....	35 V
Drain-Source Voltage, $V_{DS}$ .....	650 V
Drain Current, $I_D$	
continuous .....	2.7 A
single-pulse, $t_w \leq 1$ ms .....	7.2 A
Avalanche Energy, $E_{AS}$	
single-pulse .....	158 mJ
Over-Current Protection Voltage Range,	
$V_{OCP}$ .....	-0.3 V to +6 V
Insulation RMS Voltage,	
$V_{WM(RMS)}$ .....	2000 V
Package Power Dissipation, $P_D$	
control ( $V_{IN} \times I_{IN(ON)}$ ) .....	0.8 W
total .....	See Graph
FET Channel Temperature, $T_J$ ...	+150°C
Internal Frame Temperature, $T_F$ ...	+125°C
Operating Temperature Range,	
$T_A$ .....	-20°C to +125°C
Storage Temperature Range,	
$T_S$ .....	-40°C to +125°C

### FEATURES

- Quasi-Resonant Operation
- Output Power to 120 W
- Low-Loss, Pulse-Ratio-Control Standby Mode
- Temperature-Compensated Pulse-by-Pulse Over-Current Protection
- Latched Over-Voltage and Thermal Protection
- Under-Voltage Lockout with Hysteresis
- Active Low-Pass Filter for Enhanced Light-Load Stability
- Switched Attenuation of Leading-Edge Current-Sensing Signal
- Regulated Soft Gate Drive
- Adjustable Switching Speed for EMI Control
- Overmolded Five-Pin Package

Always order by complete part number: **STR-G6653**.

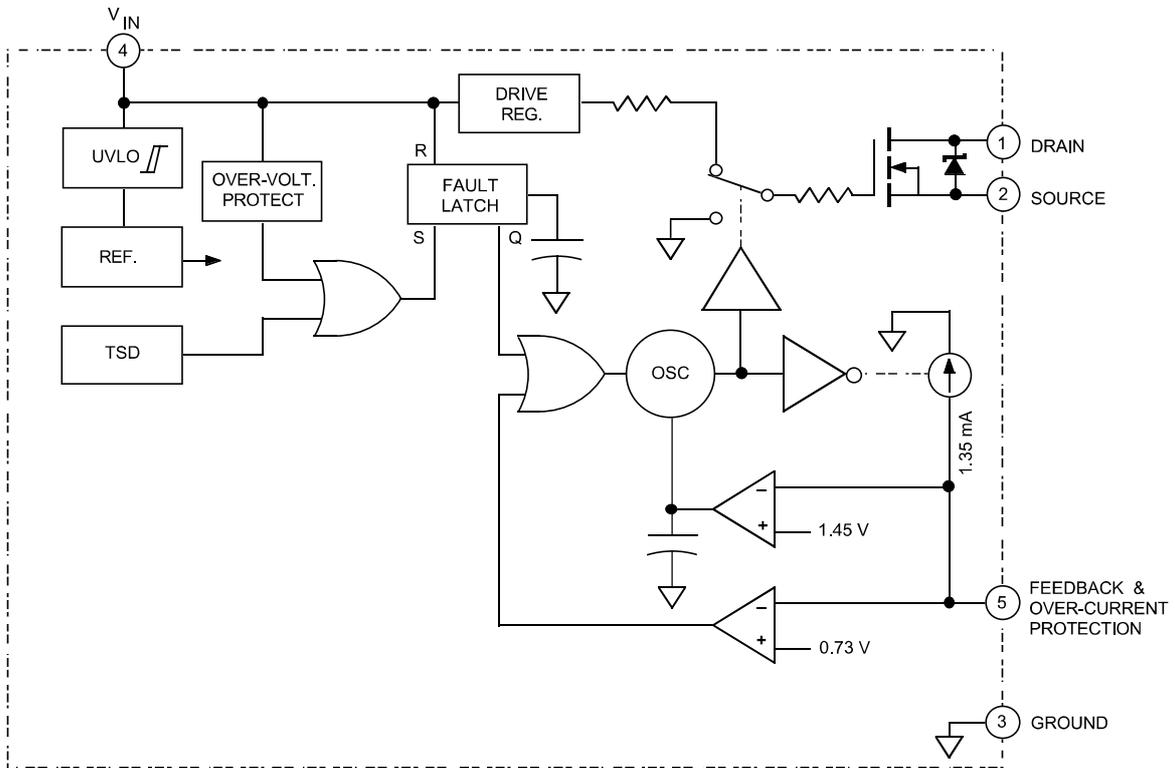
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## OFF-LINE

### QUASI-RESONANT FLYBACK

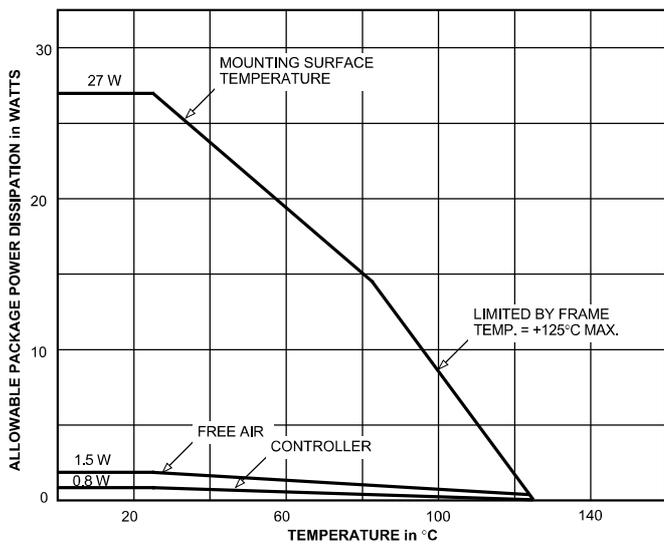
### SWITCHING REGULATOR

### FUNCTIONAL BLOCK DIAGRAM



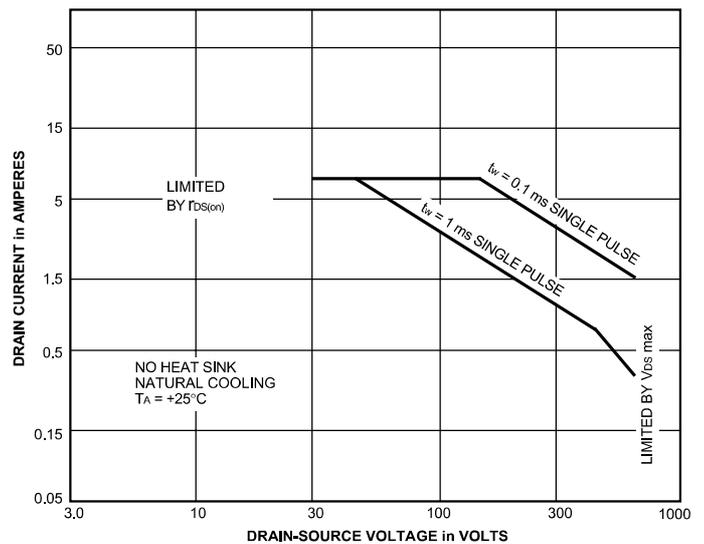
Dwg. FK-002-5

### ALLOWABLE PACKAGE POWER DISSIPATION



Dwg. GK-003-4

### MAXIMUM SAFE OPERATING AREA



Dwg. GK-004-5



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