

**DESIGNER'S DATA SHEET**

**Part Number / Ordering Information <sup>1/</sup>**

**SFF140 J** — — —  
 + Screening <sup>2/</sup> — = Not Screen  
     TX = TX Level  
     TXV = TXV Level  
     S = S Level  
 + Lead Option <sup>3/</sup> — = Cooper Core Alloy Leads  
     BW = Welded Copper Leads  
 + Package: TO-257

**SFF140J  
 SFF140JBW**

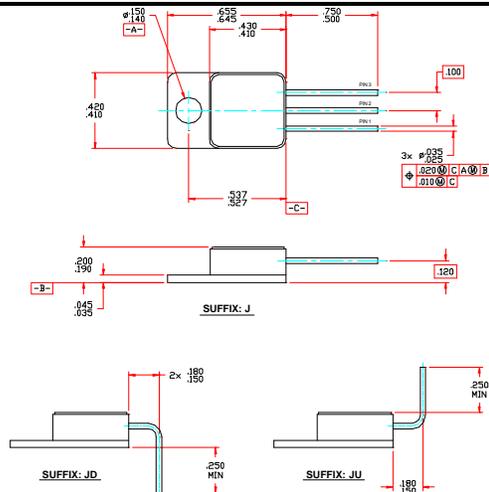
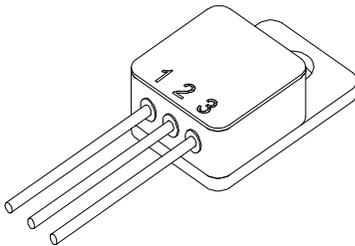
**28 AMP / 100 Volts  
 0.077 W  
 N-Channel  
 POWER MOSFET**

**Features:**

- Rugged Construction with Polysilicon Gate Cell
- Low  $R_{DS(ON)}$  and High Transconductance
- Excellent High Temperature Stability
- Very Fast Switching Speed
- Fast Recovery and Superior dV/dt Performance
- Increased Reverse Energy Capability
- Low Input and Transfer Capacitance for Easy Paralleling
- Ceramic Seals for Improved Hermeticity
- Hermetically Sealed Surface Mount Power Package
- TX, TXV, Space Level Screening Available
- Replacement for IRF140/540 Types
- Available with enhanced flexibility Cu pins: SFF140JBW

Maximum Ratings		Symbol	Value	Units
Drain – Source Voltage		$V_{DS}$	100	Volts
Gate – Source Voltage		$V_{GS}$	$\pm 20$	Volts
Continuous Collector Current		$I_D$	28	Amps
Power Dissipation	$T_C = 25^\circ C$ $T_C = 55^\circ C$	$P_D$	62.5 47.5	W
Operating & Storage Temperature		Top & Tstg	-55 to +150	$^\circ C$
Maximum Thermal Resistance Junction to Case		$R_{qJC}$	2	$^\circ C/W$

**TO-257  
 Pin Out:  
 Pin1: Drain  
 Pin2: Source  
 Pin3: Gate**



**NOTE:** All specifications are subject to change without notification. SCD's for these devices should be reviewed by SSDI prior to release.

**DATA SHEET #: F00029C**

**DOC**



**Solid State Devices, Inc.**

14830 Valley View Blvd \* La Mirada, Ca 90638  
 Phone: (562) 404-7855 \* Fax: (562) 404-1773  
 ssdi@ssdi-power.com \* www.ssdi-power.com

**SFF140J**  
**SFF140JBW**

Electrical Characteristics @ T <sub>J</sub> = 25°C (Unless Otherwise Specified)		Symbol	Min	Typ	Max	Units
Drain to Source Breakdown Voltage (VGS=0 V, ID=250 μA)		BV <sub>DSS</sub>	100	—	—	Volts
Drain to Source On State Resistance (VGS=10 V, ID=50% Rated ID)		R <sub>DS(on)1</sub>	—	0.067	0.077	W
On State Drain Current (VDS>ID(on) X RDS(on) Max, VGS=10V, ID= rated ID)		R <sub>AS(on)2</sub>		—	0.125	A
Gate Threshold Voltage (VDS=VGS, ID= 250μA)		V <sub>GS(th)</sub>	2.0	2.4	4.0	V
Forward Transconductance (VDS>ID(on) X RDS(on) Max, IDS= 60% Rated ID)		g <sub>fs</sub>	8.7	13	—	S(mho)
Zero Gate Voltage Drain Current (VDS=max rated voltage, VGS=0 V) (VDS=80% rated VDS, VGS=0 V, TA=150°C)		I <sub>DSS</sub>	—	—	25 250	mA
Gate to Source Leakage Forward Gate to Source Leakage Reverse	At rated VGS	I <sub>GSS</sub>	— —	— —	+100 -100	nA
Total Gate Charge Gate to Source Charge Gate to Drain Charge	VGS=10 Volts 60% rated VDS 60% Rated ID	Q <sub>g</sub> Q <sub>gs</sub> Q <sub>gd</sub>	— — —	40 8 19	75 12 35	nC
Turn on Delay Time Rise Time Turn on Delay Time Fall Time	VDD=50% Rated VDS 60% Rated ID RG= 6.2Ω VGS=10 Volts	t <sub>d(on)</sub> t <sub>r</sub> t <sub>d(off)</sub> t <sub>f</sub>	— — — —	15 72 40 50	23 110 60 75	nsec
Diode Forward Voltage (IS= Rated ID, VGS=0 V, T <sub>J</sub> =25°C)		V <sub>SD</sub>	—	1.3	2.5	V
Diode Reverse Recovery Time Reverse Recovery Charge	T <sub>J</sub> =25°C IF=10A Di/dt=100A/μsec	t <sub>rr</sub> Q <sub>RR</sub>	— 0.44	150 0.91	400 1.9	nsec nC
Input Capacitance Input Capacitance Reverse Transfer Capacitance	VGS=0 Volts VDS=25 Volts f=1 MHz	C <sub>iss</sub> C <sub>oss</sub> C <sub>rss</sub>	— — —	1750 575 125	— — —	pF

For thermal derating curves and other characteristics please contact SSDI Marketing Department.