

# 15Amp. Superfast Plastic Rectifiers

## MSR1560E2

$I_{F(AV)}$	15A
$V_{RRM}$	600V
$I_{FSM}$	150A
trr	30ns
$T_j$	175°C
$V_F(TYP)$	1.9V

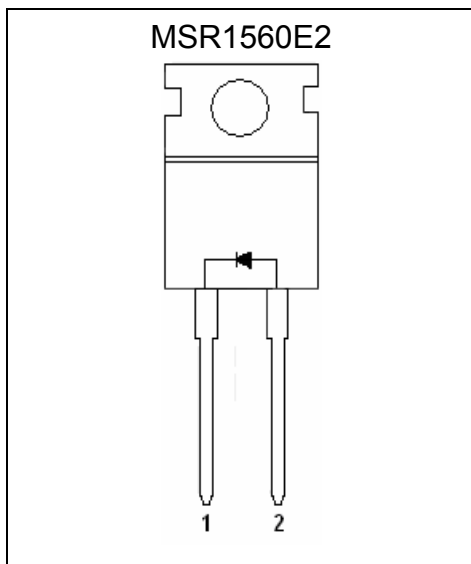
### Features

- 175°C operating junction temperature
- Glass passivated chip junction
- Low leakage current
- Superfast recovery time
- Low switching loss, high efficiency
- High forward surge capability
- High temperature soldering guaranteed : 260°C/40s, 0.25”(6.35mm) from case
- Pb-free lead plating package

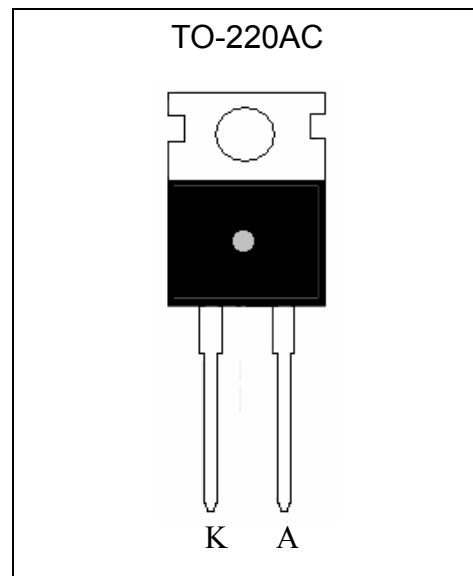
### Mechanical Data

- Case: TO-220AC molded plastic
- Mounting Position: Any
- Weight: 1.85 grams, 0.065 ounce approximately
- Terminals: Pure tin plated, solderable per J-STD-002 and JESD22-B102
- Epoxy: UL 94V-0 rate flame retardant
- Polarity : As marked.
- Mounting torque: 10 in.-lb. maximum

### Equivalent Circuit



### Outline



**Maximum Ratings and Electrical Characteristics**

(Rating at 25°C ambient temperature unless otherwise specified. Single phase, half wave, 60Hz, resistive or inductive load. For capacitive load, derate current by 20%.)

Parameter	Symbol	Min.	Typ.	Max.	Units
Maximum Recurrent peak reverse voltage	$V_{RRM}$			600	V
Maximum RMS voltage	$V_{RMS}$			420	V
Maximum DC blocking voltage	$V_{DC}$			600	V
Maximum instantaneous forward voltage at $I_F=15A$	$V_F$		1.9	2.5	V
Maximum Average forward rectified current @ $T_C=100^\circ C$	$I_{F(AV)}$			15	A
Non-repetitive peak forward surge current @ 8.3ms single half sine wave superimposed on rated load (JEDEC method)	$I_{FSM}$			150	A
Maximum instantaneous reverse current at	$V_R=600V, T_C=25^\circ C$	$I_R$		10	$\mu A$
	$V_R=600V, T_C=125^\circ C$			500	
Maximum reverse recovery time	$I_F=1A, V_R=30V, dI_F/dt=100A/\mu s$	$t_{rr}$		30	ns
Typical junction capacitance @ $f=1MHz$ and applied 4V reverse voltage	$C_J$		46		pF
Storage temperature range	$T_{stg}$	-65		+175	$^\circ C$
Operating junction temperature range	$T_J$	-65		+175	$^\circ C$

**Thermal Data**

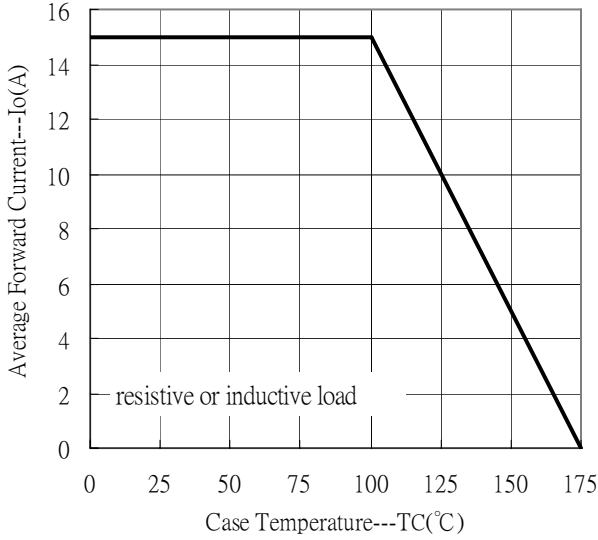
Parameter	Symbol	Value	Unit
Maximum Thermal Resistance, Junction-to-case	$R_{th,j-c}$	1.7	$^\circ C/W$
Maximum Thermal Resistance, Junction-to-ambient	$R_{th,j-a}$	60	$^\circ C/W$

**Ordering Information**

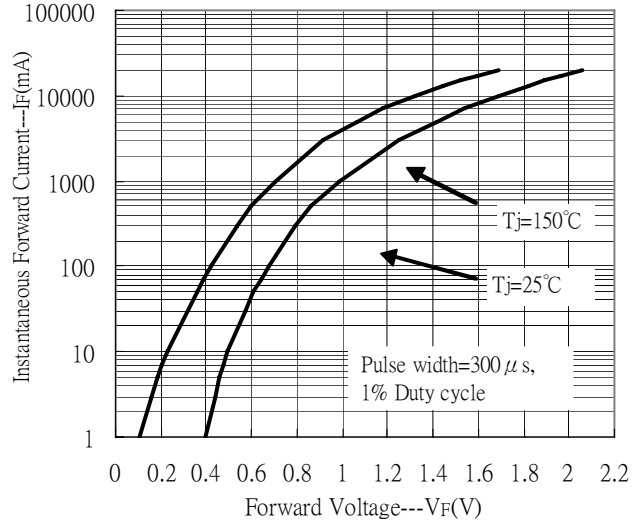
Device	Package	Shipping
MSR1560E2	TO-220AC (RoHS compliant package)	50 pcs / Tube, 40 Tubes/Box

**Typical Characteristics**

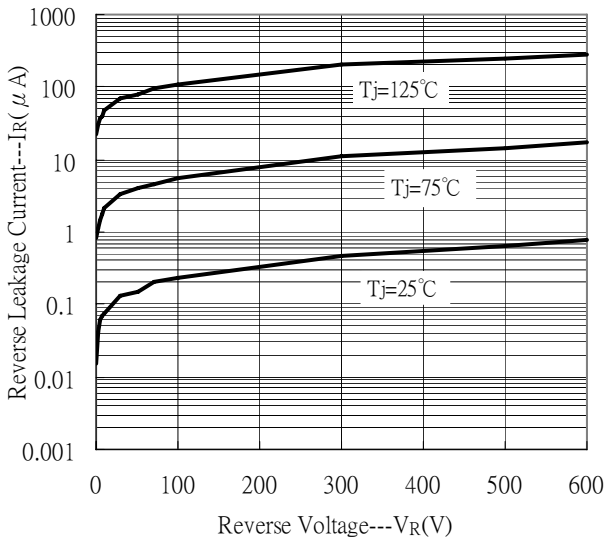
Forward Current Derating Curve



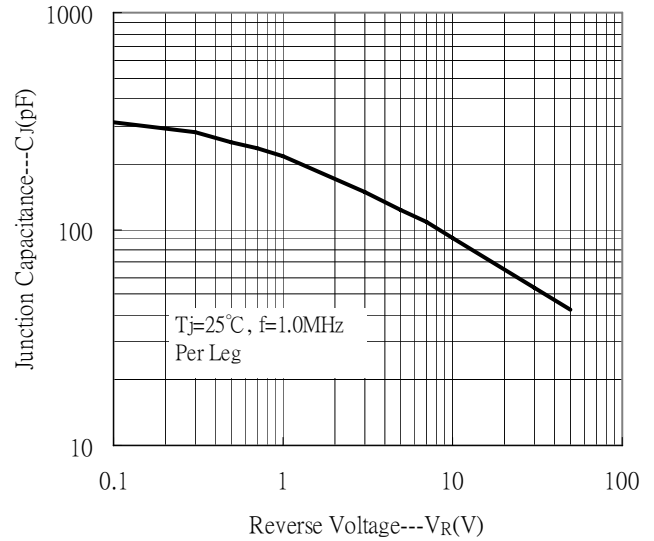
Forward Current vs Forward Voltage



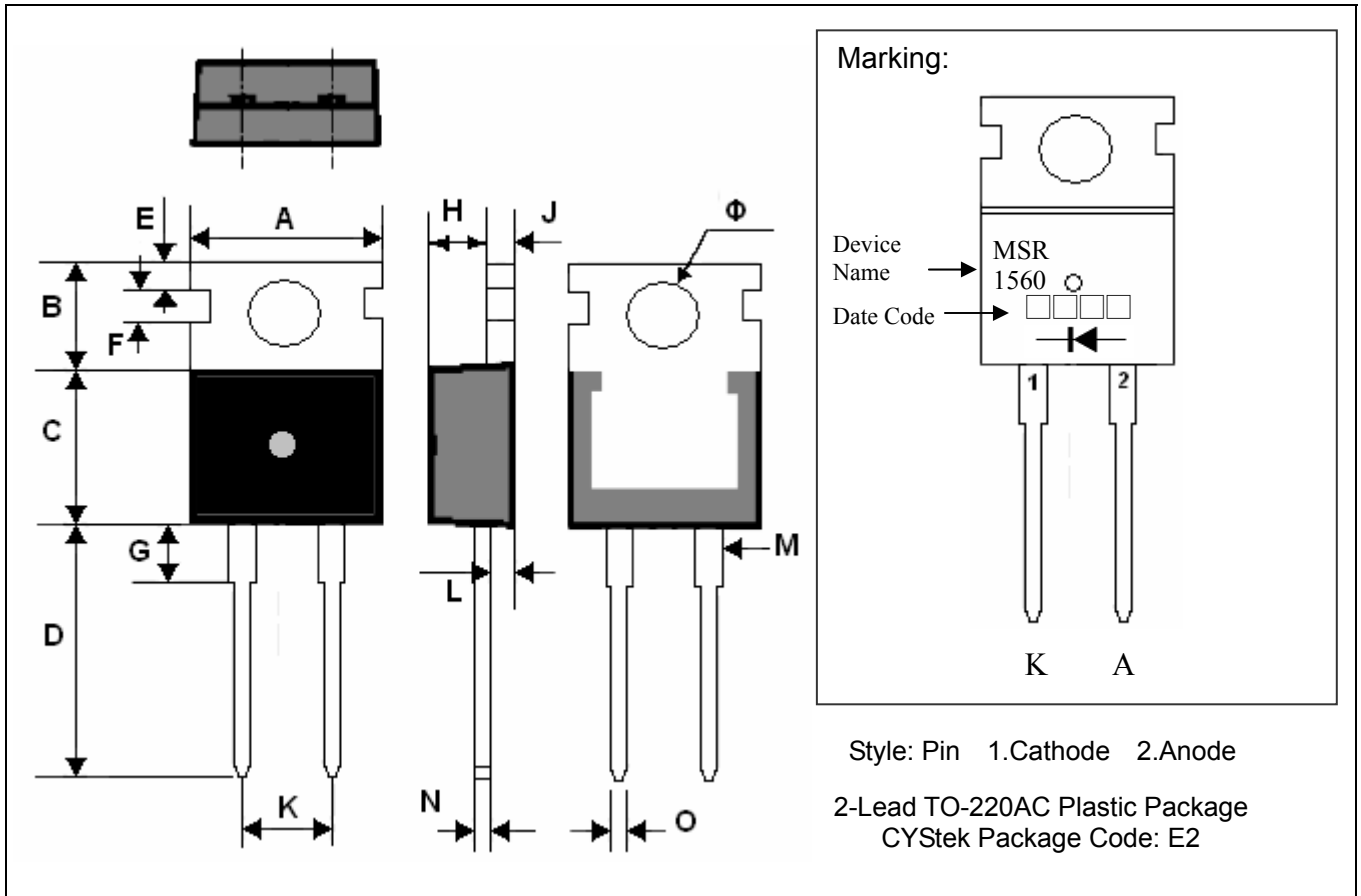
Reverse Leakage Current vs Reverse Voltage



Junction Capacitance vs Reverse Voltage



**TO-220AC Dimension**



\*:Typical

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.382	0.398	9.70	10.10	J	0.049	0.055	1.25	1.40
B	0.248	0.264	6.30	6.70	K	0.197	0.203	5.00	5.15
C	0.354	0.373	9.00	9.47	L	0.087	0.102	2.20	2.60
D	0.504	0.524	12.80	13.30	M	0.056	0.064	1.42	1.62
E	0.047	0.055	1.20	1.40	N	0.018	0.024	0.45	0.60
F	0.067*		1.70*		O	0.027	0.035	0.70	0.90
G	0.098*		2.50*		Φ	Φ0.142*		Φ3.60*	
H	0.118	0.134	3.00	3.40					

**Notes:** 1.Controlling dimension: millimeters.  
 2.Maximum lead thickness includes lead finish thickness, and minimum lead thickness is the minimum thickness of base material.  
 3.If there is any question with packing specification or packing method, please contact your local CYStek sales office.

**Material:**

- Lead: Pure tin plated
- Mold Compound: Epoxy resin family, flammability solid burning class: UL94V-0

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