

## TO-220AB Plastic-Encapsulate Diodes

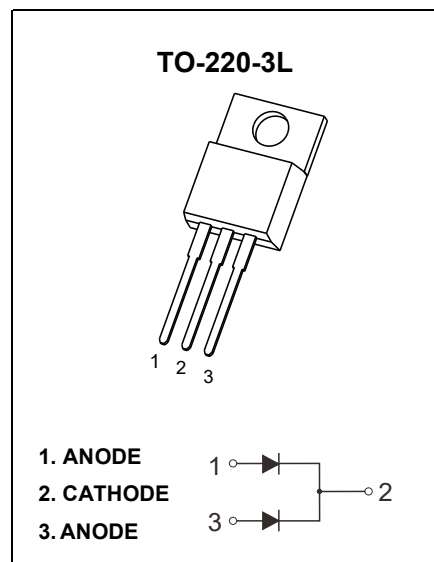
SCHOTTKY BARRIER RECTIFIER

### Features:

- Low Power Loss, High Efficiency
- Guard Ring Die Construction for Transient Protection
- High Current Capability and Low Forward Voltage Drop

### MAIN CHARACTERISTICS

$I_O$	<b>40 (2×20) A</b>
$V_{RRM}$	<b>100 V</b>
$T_j$	<b>150 °C</b>
$V_{F(typ)}$	<b>0.68 V (@<math>T_j=125^\circ\text{C}</math>)</b>



### MAXIMUM RATINGS ( $T_a=25^\circ\text{C}$ unless otherwise noted )

Symbol	Parameter	KSR40100CT	Unit
$V_{RRM}$	Peak repetitive reverse voltage	100	V
$V_{RWM}$	Working peak reverse voltage		
$V_R$	DC blocking voltage		
$V_{R(RMS)}$	RMS reverse voltage	70	V
$I_O$	Average rectified output current	40	A
$I_{FSM}$	Non-Repetitive peak forward surge current (8.3ms half sine wave)	250	A
$R_{\theta Jc}$	Thermal resistance from junction to case, $T_c=25^\circ\text{C}$	2.0	$^\circ\text{C/W}$
$R_{\theta JA}$	Thermal resistance from junction to ambient	62.5	$^\circ\text{C/W}$
$T_j$	Junction temperature	150	$^\circ\text{C}$
$T_{stg}$	Storage temperature	-55~+150	$^\circ\text{C}$

### ELECTRICAL CHARACTERISTICS ( $T_a=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Reverse voltage	$V_{(BR)}$	$I_R=0.1\text{mA}$	100			V
Reverse current	$I_R$	$V_R=100\text{V}$	$T_j=25^\circ\text{C}$	10	100	$\mu\text{A}$
			$T_j=125^\circ\text{C}$	10		mA
Forward voltage	$V_F$	$I_F=10\text{A}$	$T_j=25^\circ\text{C}$	0.60		V
			$T_j=125^\circ\text{C}$	0.55		V
		$I_F=20\text{A}$	$T_j=25^\circ\text{C}$	0.72	0.82	V
			$T_j=125^\circ\text{C}$	0.68		V

\*Pulse test: pulse width  $\leq 300\mu\text{s}$ , duty cycle  $\leq 2.0\%$ .

## Typical Characteristics

FIG.1: FORWARD CURRENT DERATING CURVE

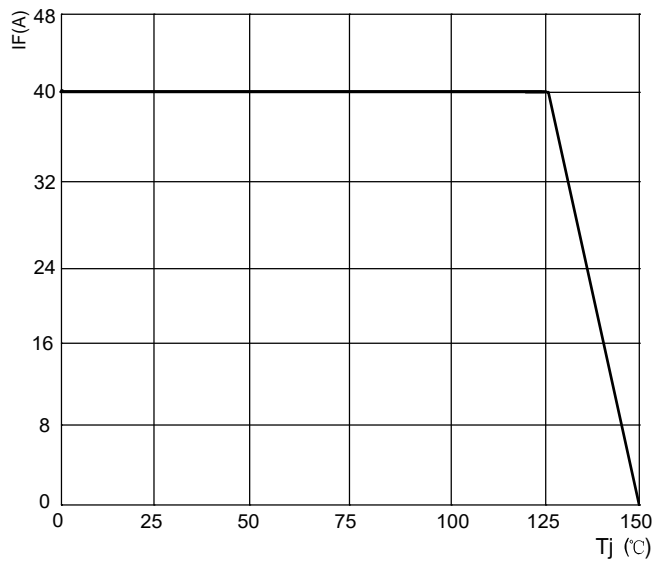


FIG.2: TYPICAL FORWARD CHARACTERISTICS

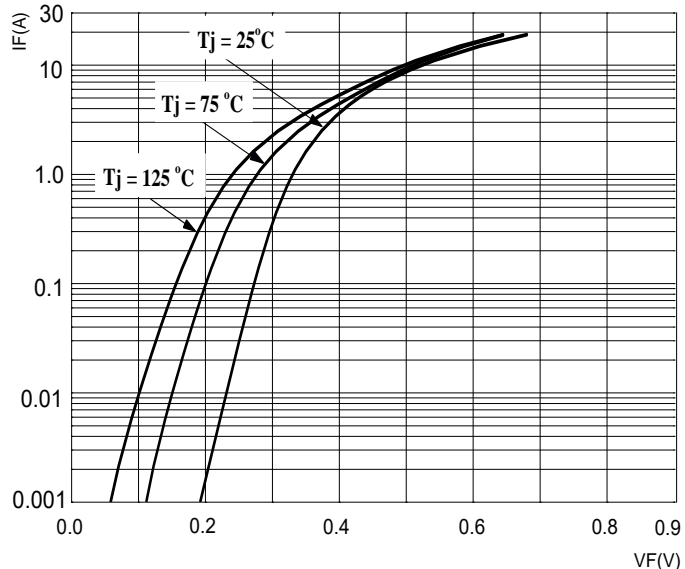


FIG.3: TOTAL CAPACITANCE DERATING CURVE

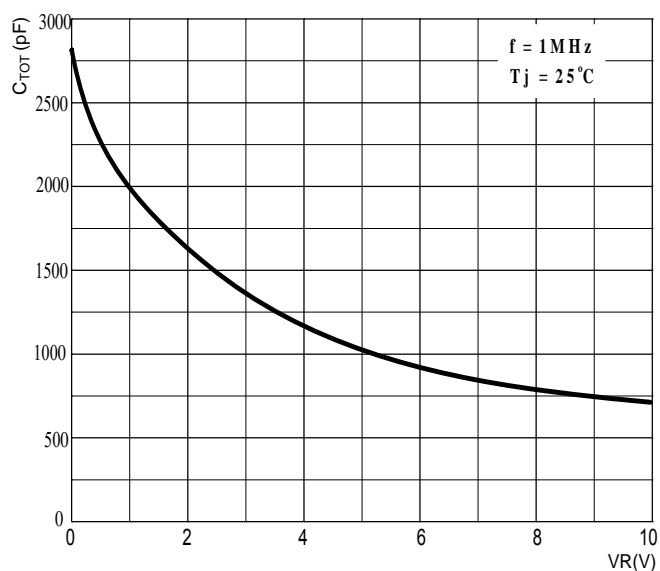
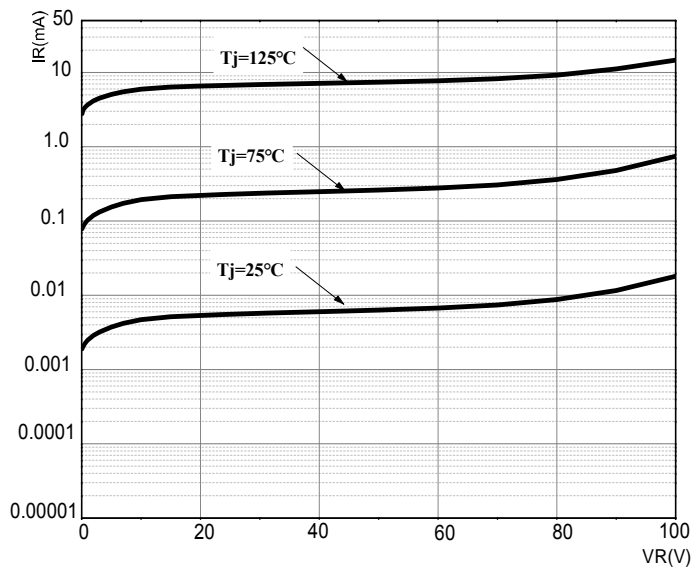
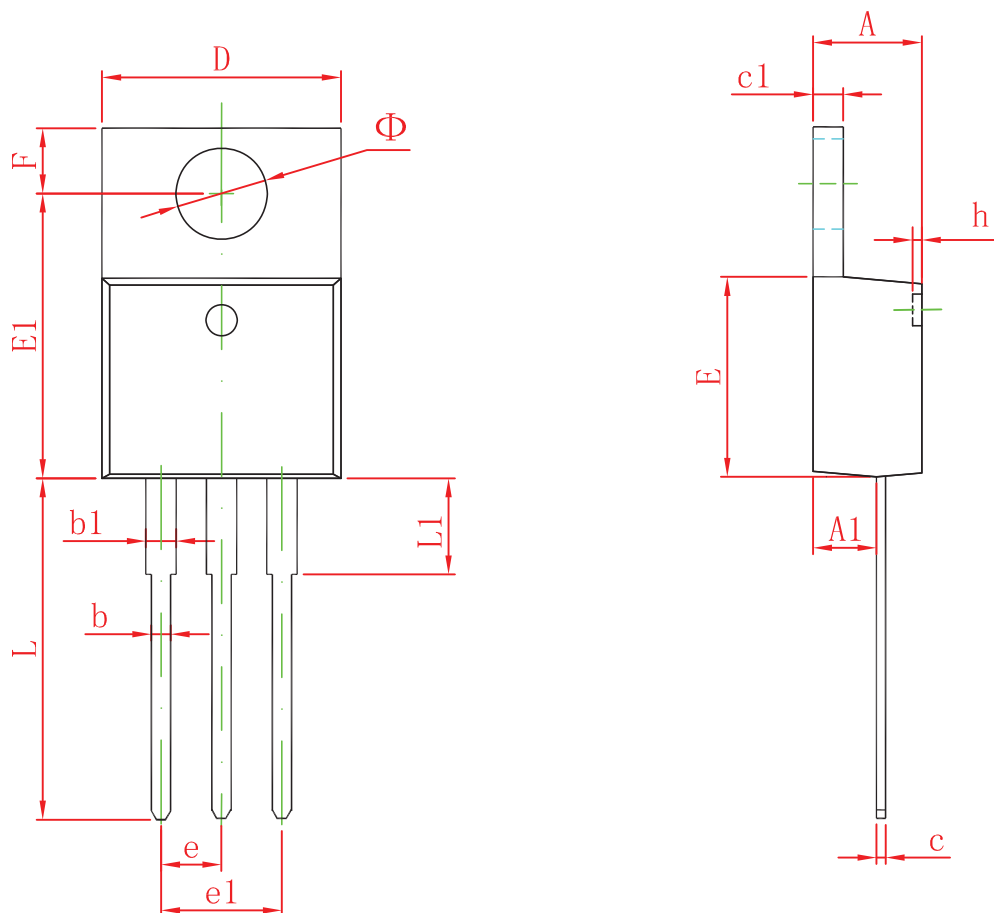


FIG.4: TYPICAL REVERSE CHARACTERISTICS



### TO-220AB Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	4.450	4.750	0.175	0.187
A1	2.520	2.820	0.099	0.111
b	0.710	0.910	0.028	0.036
b1	1.170	1.370	0.046	0.054
c	0.300	0.500	0.012	0.020
c1	1.170	1.370	0.046	0.054
D	9.830	10.330	0.387	0.407
E	8.500	8.900	0.335	0.350
E1	12.050	12.650	0.474	0.498
e	2.540 TYP		0.100 TYP	
e1	4.900	5.200	0.192	0.205
F	2.540	2.940	0.100	0.116
h	0.100 TYP		0.004 TYP	
L	13.300	13.800	0.523	0.543
L1	3.540	3.940	0.139	0.155
$\Phi$	3.735	3.935	0.147	0.155