

TO-220AB/ITO-220AB Plastic-Encapsulate Diode

SCHOTTKY BARRIER RECTIFIER

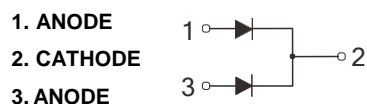
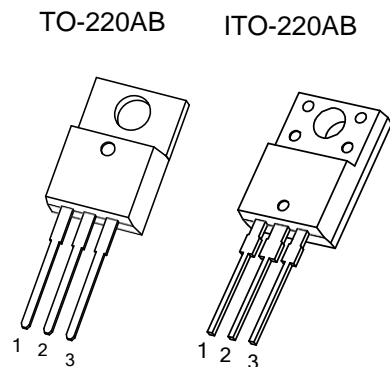
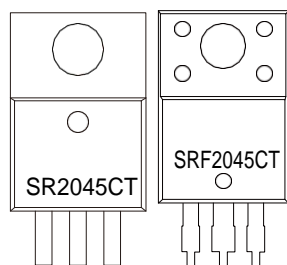
Features:

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

MAIN CHARACTERISTICS

I_o	20 (2x10) A
V_{RRM}	45 V
T_j	150 °C
$V_{F(typ)}$	0.56V (@T_j=125°C)

MARKING



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

Parameter	Symbol	KSR		Unit
		KSR2045CT	KSRF2045CT	
Peak repetitive reverse voltage	V_{RRM}	45		V
Working peak reverse voltage	V_{RWM}			
DC blocking voltage	V_R			
RMS reverse voltage	$V_{R(RMS)}$	31.5		V
Average rectified output current	I_o	20		A
Non-Repetitive peak forward surge current (8.3ms half sine wave)	I_{FSM}	200		A
Thermal resistance from junction to case, $T_c=25^\circ\text{C}$	$R_{\theta Jc}$	2.0	3.0	$^\circ\text{C/W}$
Thermal resistance from junction to ambient	$R_{\theta JA}$	62.5		$^\circ\text{C/W}$
Junction temperature	T_j	-55~+150		$^\circ\text{C}$
Storage temperature	T_{stg}	-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	$V_{(BR)}$	$I_R=0.1\text{mA}$	45			V
Reverse current	I_R	$V_R=45\text{V}$	$T_j=25^\circ\text{C}$	10.0	100	μA
			$T_j=125^\circ\text{C}$	10.0		mA
Forward voltage	V_F	$I_F=5\text{A}$	$T_j=25^\circ\text{C}$	0.50		V
			$T_j=125^\circ\text{C}$	0.44		V
		$I_F=10\text{A}$	$T_j=25^\circ\text{C}$	0.60	0.65	V
			$T_j=125^\circ\text{C}$	0.56		V

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

Typical Characteristics

FIG.1: FORWARD CURRENT DERATING CURVE

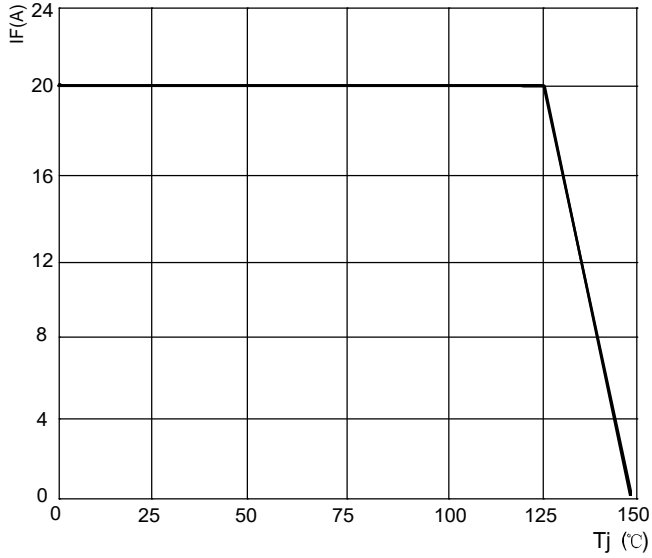


FIG.2: TYPICAL FORWARD CHARACTERISTICS

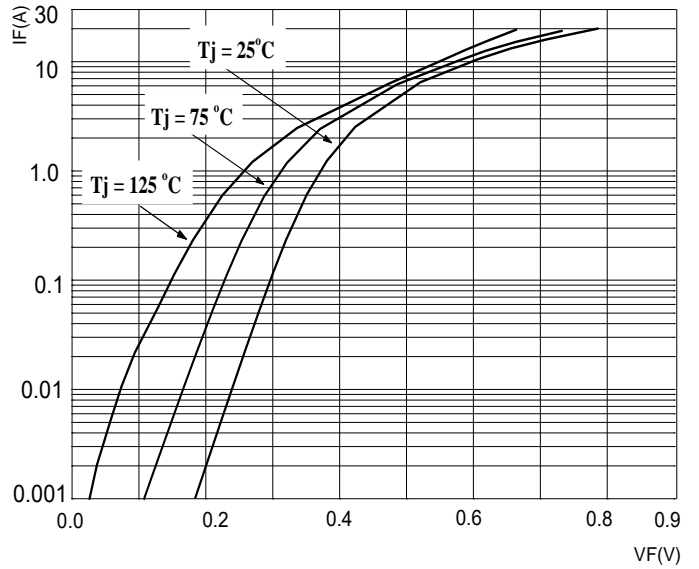


FIG.3: TOTAL CAPACITANCE DERATING CURVE

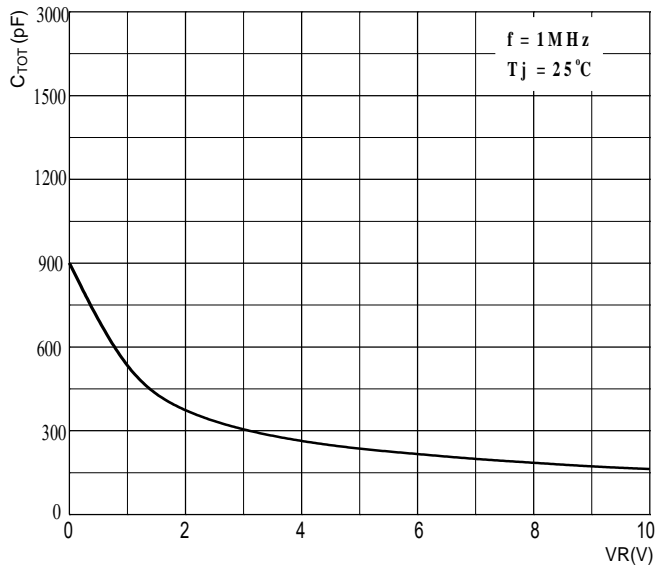
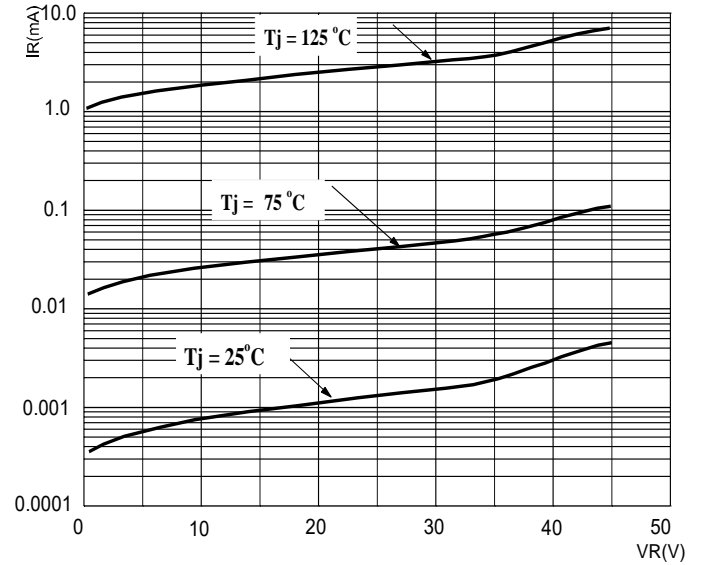
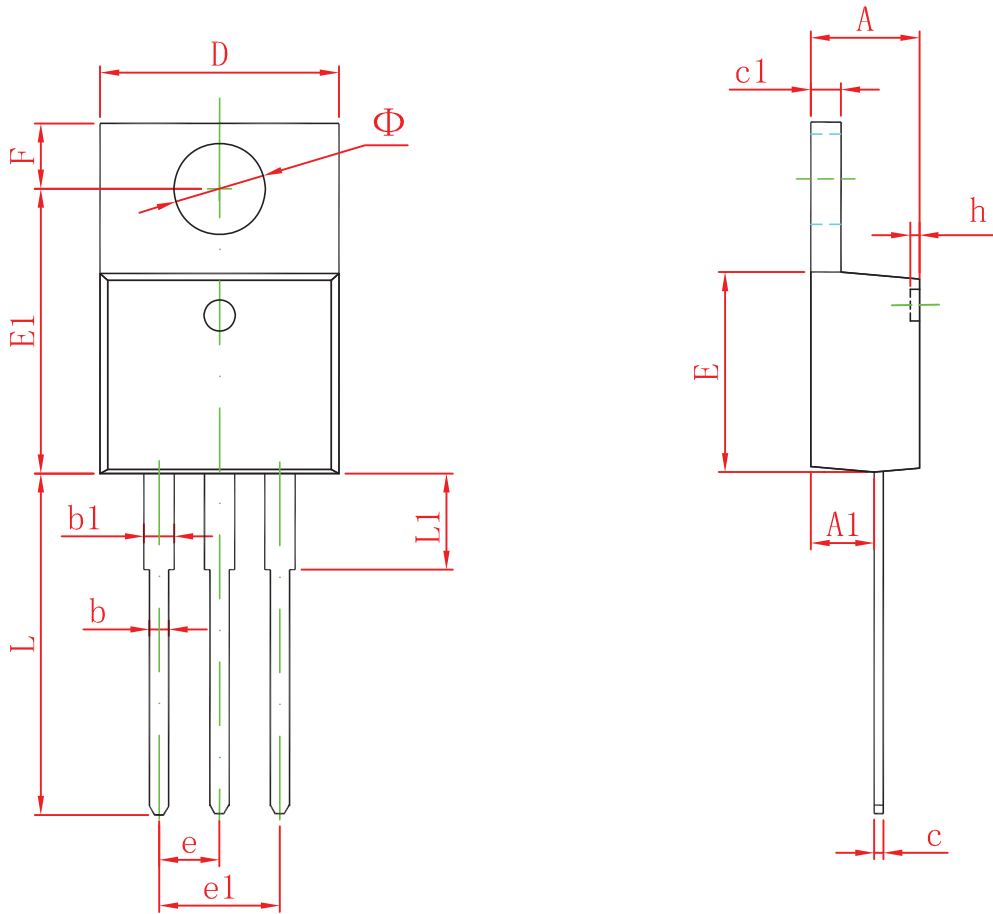


FIG.4: TYPICAL REVERSE CHARACTERISTICS

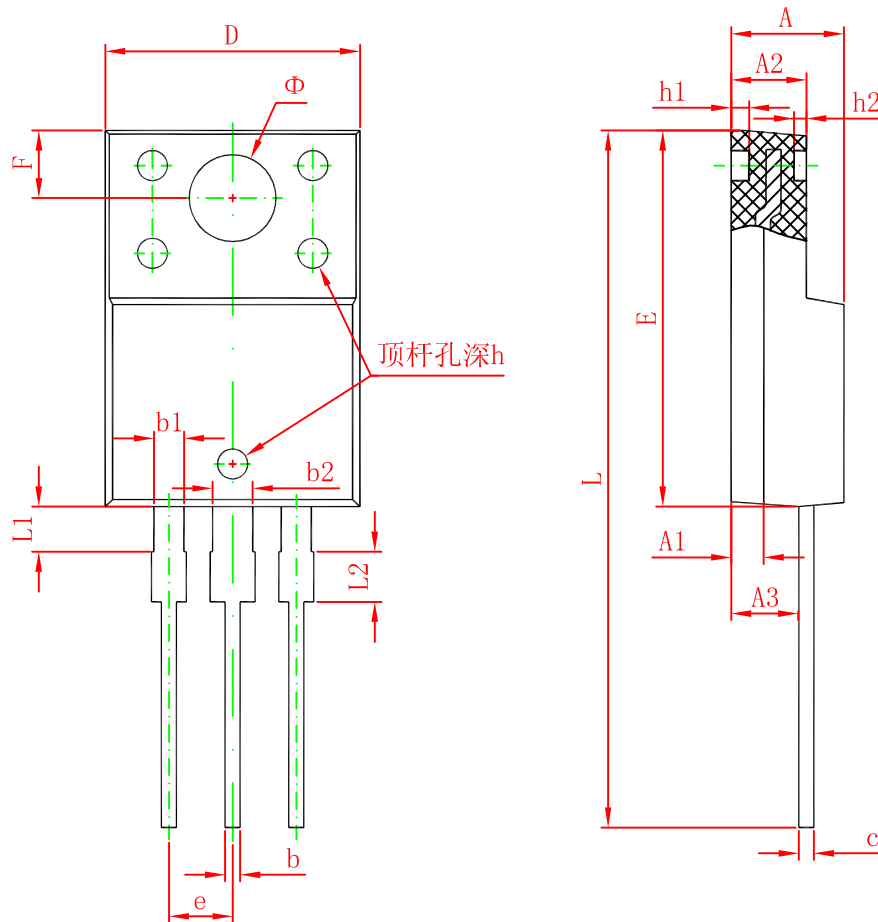


TO-220AB Package Outline Dimensions



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
Φ	3.735	3.935	0.147	0.155

ITO-220AB Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	4.300	4.700	0.169	0.185
A1	1.300 REF.		0.051 REF.	
A2	2.800	3.200	0.110	0.126
A3	2.500	2.900	0.098	0.114
b	0.500	0.750	0.020	0.030
b1	1.100	1.350	0.043	0.053
b2	1.500	1.750	0.059	0.069
c	0.500	0.750	0.020	0.030
D	9.960	10.360	0.392	0.408
E	14.800	15.200	0.583	0.598
e	2.540 TYP.		0.100 TYP.	
F	2.700 REF.		0.106 REF.	
Φ	3.500 REF.		0.138 REF.	
h	0.000	0.300	0.000	0.012
h1	0.800 REF.		0.031 REF.	
h2	0.500 REF.		0.020 REF.	
L	28.000	28.400	1.102	1.118
L1	1.700	1.900	0.067	0.075
L2	1.900	2.100	0.075	0.083