

## Thermal Characteristics

Package	$I_D$ (continuous) <sup>†</sup>	$I_D$ (pulsed)	Power Dissipation @ $T_A = 25^\circ\text{C}$	$I_{DR}$ <sup>‡</sup>	$I_{DRM}$
TO-243AA	100mA	300mA	1.3W <sup>‡</sup>	100mA	300mA

### Notes:

- †  $I_D$  (continuous) is limited by max rated  $T_J$ .  
 ‡ Mounted on FR4 board, 25mm x 25mm x 1.57mm.

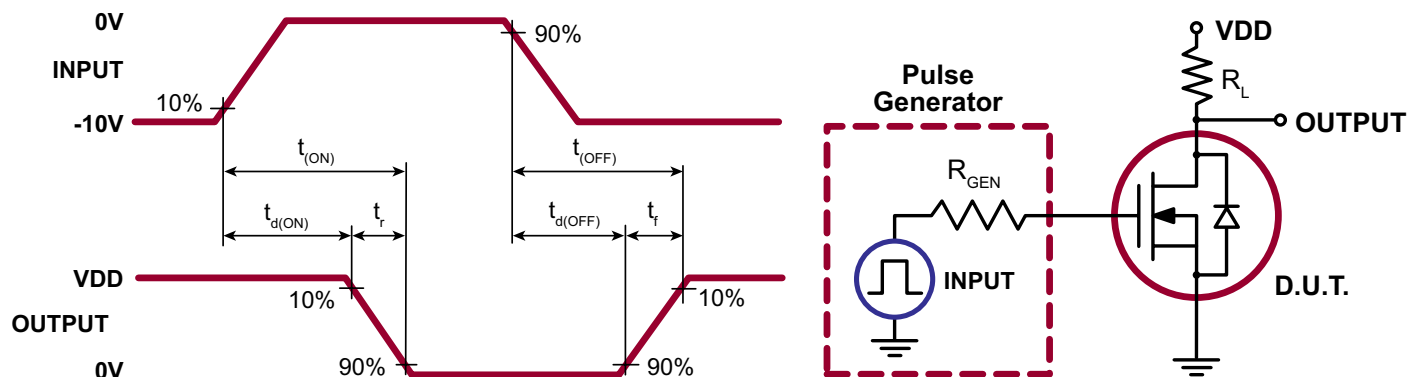
## Electrical Characteristics ( $T_A = 25^\circ\text{C}$ unless otherwise specified)

Sym	Parameter	Min	Typ	Max	Units	Conditions
$BV_{DSX}$	Drain-to-source breakdown voltage	450	-	-	V	$V_{GS} = -5.0\text{V}$ , $I_D = 100\mu\text{A}$
$V_{GS(OFF)}$	Gate-to-source off voltage	-1.5	-	-3.5	V	$V_{DS} = 15\text{V}$ , $I_D = 10\mu\text{A}$
$\Delta V_{GS(OFF)}$	Change in $V_{GS(OFF)}$ with temperature	-	-	-4.5	mV/°C	$V_{DS} = 15\text{V}$ , $I_D = 10\mu\text{A}$
$I_{GSS}$	Gate body leakage current	-	-	100	nA	$V_{GS} = \pm 20\text{V}$ , $V_{DS} = 0\text{V}$
$I_{D(OFF)}$	Drain-to-source leakage current	-	-	1.0	$\mu\text{A}$	$V_{DS} = \text{Max rating}$ , $V_{GS} = -5.0\text{V}$
		-	-	1.0	mA	$V_{DS} = 0.8 \text{ Max Rating}$ , $V_{GS} = -5.0\text{V}$ , $T_A = 125^\circ\text{C}$
$I_{DSS}$	Saturated drain-to-source current	120	-	-	mA	$V_{GS} = 0\text{V}$ , $V_{DS} = 15\text{V}$
$R_{DS(ON)}$	Static drain-to-source on-state resistance	-	-	60	$\Omega$	$V_{GS} = 0\text{V}$ , $I_D = 100\text{mA}$
$\Delta R_{DS(ON)}$	Change in $R_{DS(ON)}$ with temperature	-	-	1.1	%/°C	$V_{GS} = 0\text{V}$ , $I_D = 100\text{mA}$
$G_{FS}$	Forward transconductance	140	-	-	mmho	$V_{DS} = 10\text{V}$ , $I_D = 100\text{mA}$
$C_{ISS}$	Input capacitance	-	-	120	pF	$V_{GS} = -5.0\text{V}$ , $V_{DS} = 25\text{V}$ , $f = 1.0\text{MHz}$
$C_{OSS}$	Common source output capacitance	-	-	15		
$C_{RSS}$	Reverse transfer capacitance	-	-	10		
$t_{d(ON)}$	Turn-on delay time	-	-	10	ns	$V_{DD} = 25\text{V}$ , $I_D = 100\text{mA}$ , $R_{GEN} = 25\Omega$ ,
$t_r$	Rise time	-	-	15		
$t_{d(OFF)}$	Turn-off delay time	-	-	20		
$t_f$	Fall time	-	-	35		
$V_{SD}$	Diode forward voltage drop	-	-	1.8	V	$V_{GS} = -5.0\text{V}$ , $I_{SD} = 100\text{mA}$
$t_{rr}$	Reverse recovery time	-	800	-	ns	$V_{GS} = -5.0\text{V}$ , $I_{SD} = 100\text{mA}$

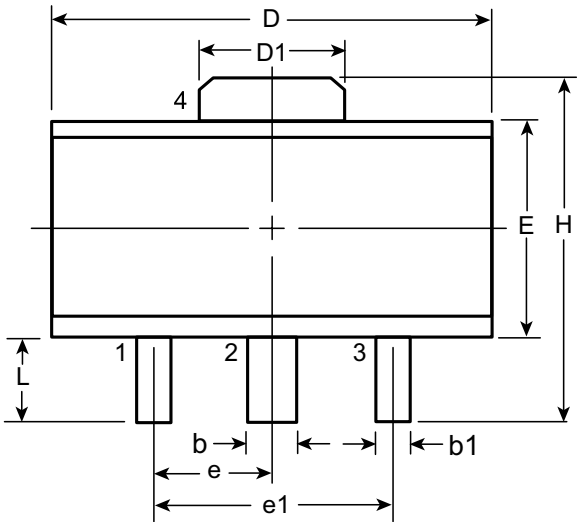
### Notes:

1. All D.C. parameters 100% tested at  $25^\circ\text{C}$  unless otherwise stated. (Pulse test: 300 $\mu\text{s}$  pulse, 2% duty cycle.)
2. All A.C. parameters sample tested.

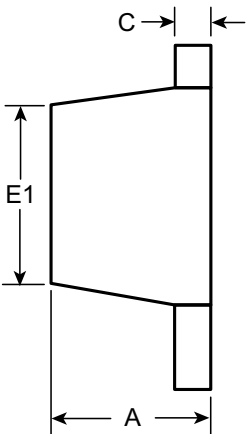
## Switching Waveforms and Test Circuit



3-Lead TO-243AA (SOT-89) Package Outline (N8)



Top View



Side View

Symbol		A	b	b1	C	D	D1	E	E1	e	e1	H	L
Dimensions (mm)	MIN	1.40	0.44	0.36	0.35	4.40	1.62	2.29	2.00†	1.50 BSC	3.00 BSC	3.94	0.73†
	NOM	-	-	-	-	-	-	-	-			-	-
	MAX	1.60	0.56	0.48	0.44	4.60	1.83	2.60	2.29			4.25	1.20

JEDEC Registration TO-243, Variation AA, Issue C, July 1986.

† This dimension differs from the JEDEC drawing

Drawings not to scale.

Supertex Doc. #: DSPD-3TO243AAN8, Version F111010.

(The package drawing(s) in this data sheet may not reflect the most current specifications. For the latest package outline information go to <http://www.supertex.com/packaging.html>.)

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