

Discrete MOSFET - Medium Voltage (continued)

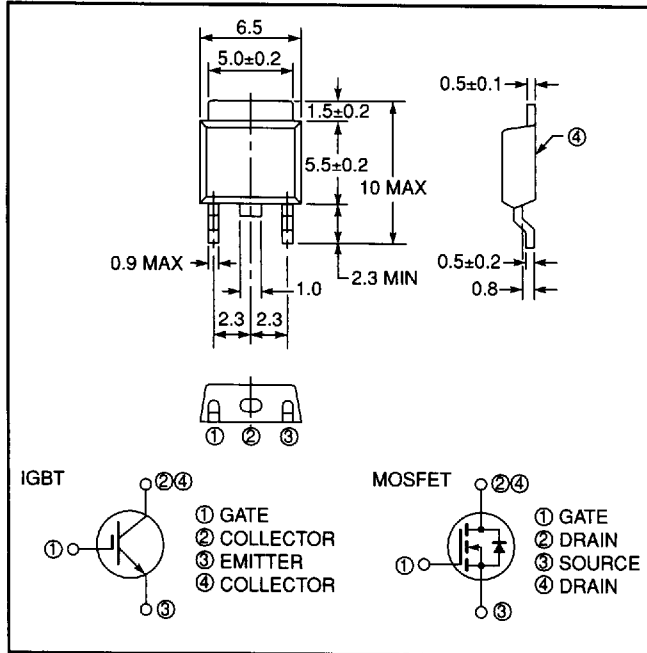
FS Series MOSFETs (450 ~ 600V)

Device Number	Maximum Ratings, $T_c = 25^\circ\text{C}$				Electrical Characteristics				Package	
	V_{DS} (V)	I_D (A)	P_D (W)	V_{GS} (V)	$r_{DS(on)}$ (Ω)		$V_{GS(th)}$ (V)	C_{iss} (pF)	Outline	Page
					Typ.	Max.				
FS14UM-9	450	14	150	± 30	0.40	0.52	3	1500	TO-220	31
FS14VS-9	450	14	150	± 30	0.40	0.52	3	1500	TO-220S	31
FS14KM-9	450	14	40	± 30	0.40	0.52	3	1500	TO-220FN	31
FS14SM-9	450	14	150	± 30	0.40	0.52	3	1500	TO-3P	32
FS16UM-9	450	16	150	± 30	0.35	0.45	3	1700	TO-220	31
FS16VS-9	450	16	150	± 30	0.35	0.45	3	1700	TO-220S	31
FS16KM-9	450	16	40	± 30	0.35	0.45	3	1700	TO-220FN	31
FS16SM-9	450	16	150	± 30	0.35	0.45	3	1700	TO-3P	32
FS18SM-9	450	18	250	± 30	0.25	0.33	3	2200	TO-3P	32
FS22SM-9	450	22	275	± 30	0.19	0.25	3	2800	TO-3P	32
FS3UM-10	500	3	60	± 30	3.4	4.4	3	300	TO-220	31
FS3VS-10	500	3	60	± 30	3.4	4.4	3	300	TO-220S	31
FS3KM-10	500	3	30	± 30	3.4	4.4	3	300	TO-220FN	31
FS5UM-10	500	5	90	± 30	1.4	1.8	3	600	TO-220	31
FS5VS-10	500	5	90	± 30	1.4	1.8	3	600	TO-220S	31
FS5KM-10	500	5	35	± 30	1.4	1.8	3	600	TO-220FN	31
FS10UM-10	500	10	125	± 30	0.70	0.90	3	1100	TO-220	31
FS10VS-10	500	10	125	± 30	0.70	0.90	3	1100	TO-220S	31
FS10KM-10	500	10	35	± 30	0.70	0.90	3	1100	TO-220FN	31
FS10SM-10	500	10	125	± 30	0.70	0.90	3	1100	TO-3P	32
FS14UM-10	500	14	150	± 30	0.50	0.64	3	1500	TO-220	31
FS14VS-10	500	14	150	± 30	0.50	0.64	3	1500	TO-220S	31
FS14KM-10	500	14	40	± 30	0.50	0.64	3	1500	TO-220FN	31
FS14SM-10	500	14	150	± 30	0.50	0.64	3	1500	TO-3P	32
FS16UM-10	500	16	150	± 30	0.43	0.56	3	1700	TO-220	31
FS16VS-10	500	16	150	± 30	0.43	0.56	3	1700	TO-220S	31
FS16KM-10	500	16	40	± 30	0.43	0.56	3	1700	TO-220FN	31
FS16SM-10	500	16	150	± 30	0.43	0.56	3	1700	TO-3P	32
FS18SM-10	500	18	250	± 30	0.30	0.40	3	2200	TO-3P	32
FS18RM-10	500	18	65	± 30	0.30	0.40	3	2200	TO-3PF	33
FS22SM-10	500	22	275	± 30	0.22	0.29	3	2800	TO-3P	32
FS2UM-12	600	2	60	± 30	5.0	6.4	3	300	TO-220	31
FS2VS-12	600	2	60	± 30	5.0	6.4	3	300	TO-220S	31
FS2KM-12	600	2	30	± 30	5.0	6.4	3	300	TO-220FN	31
FS4UM-12	600	4	90	± 30	2.0	2.6	3	600	TO-220	31
FS4VS-12	600	4	90	± 30	2.0	2.6	3	600	TO-220S	31
FS4KM-12	600	4	35	± 30	2.0	2.6	3	600	TO-220FN	31
FS7UM-12	600	7	125	± 30	1.0	1.3	3	1100	TO-220	31
FS7VS-12	600	7	125	± 30	1.0	1.3	3	1100	TO-220S	31
FS7KM-12	600	7	35	± 30	1.0	1.3	3	1100	TO-220FN	31
FS7SM-12	600	7	125	± 30	1.0	1.3	3	1100	TO-3P	32
FS10UM-12	600	10	150	± 30	0.72	0.94	3	1500	TO-220	31
FS10VS-12	600	10	150	± 30	0.72	0.94	3	1500	TO-220S	31
FS10KM-12	600	10	40	± 30	0.72	0.94	3	1500	TO-220FN	31
FS10SM-12	600	10	150	± 30	0.72	0.94	3	1500	TO-3P	32
FS14SM-12	600	14	250	± 30	0.46	0.60	3	2100	TO-3P	32
FS20SM-12	600	20	275	± 30	0.30	0.43	3	2800	TO-3P	32

(Ω) - shows maximum value of on-resistance at $V_{GS} = 10V$

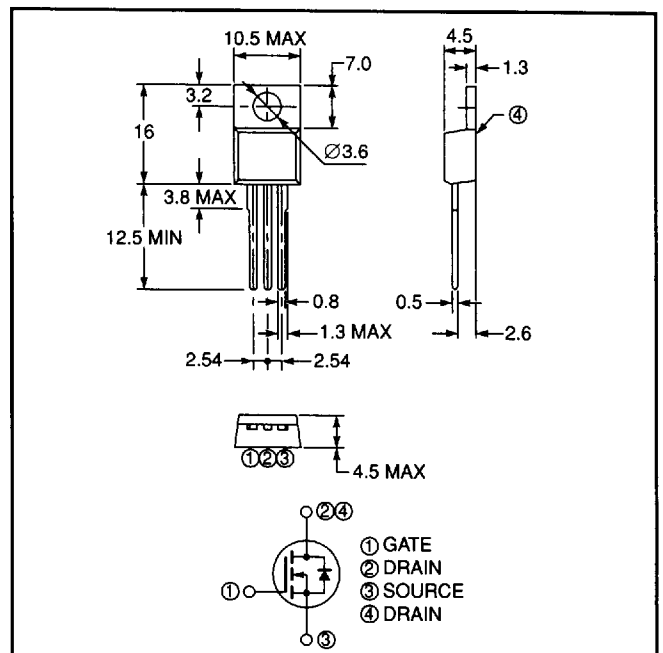
Device Outline Drawings

MP-3



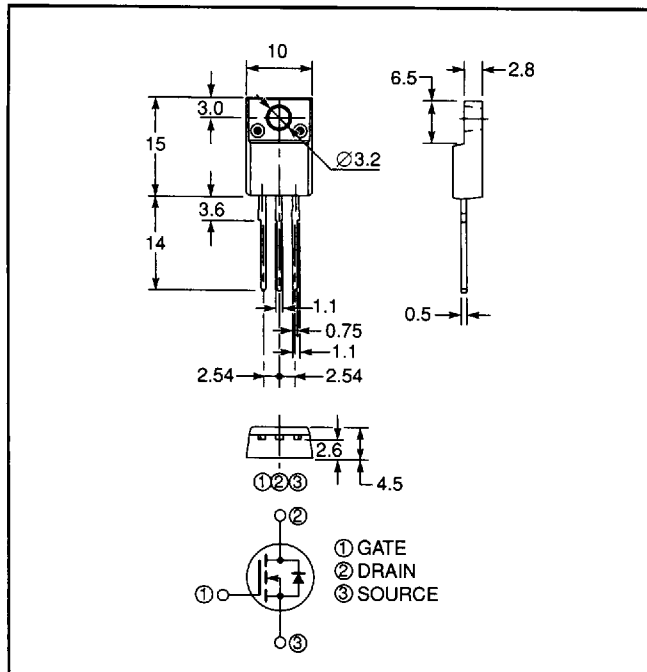
IGBT CT**AS-8
MOSFET FS**AS-8

TO-220



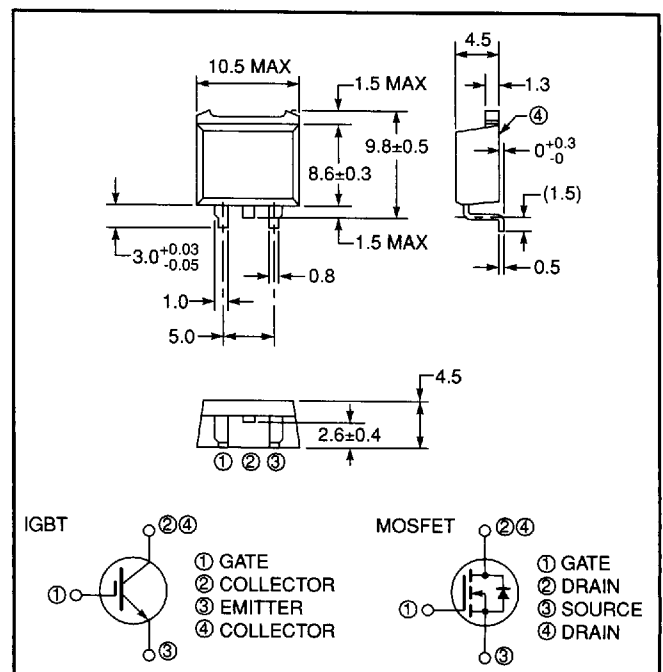
MOSFET FK**UM-**, FS**UM-**

TO-220FN



MOSFET FK**KM-**, FS**KM-**

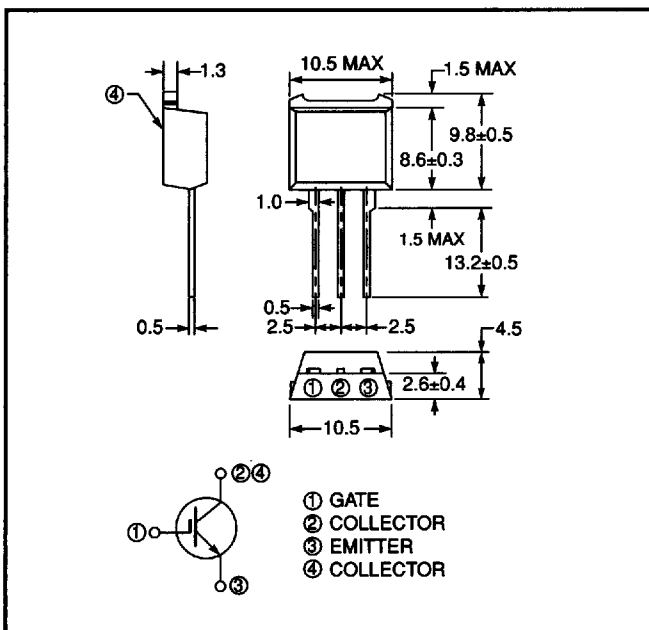
TO-220S



IGBT CT**VS-8
MOSFET FK**VS-**, FS**VS-**

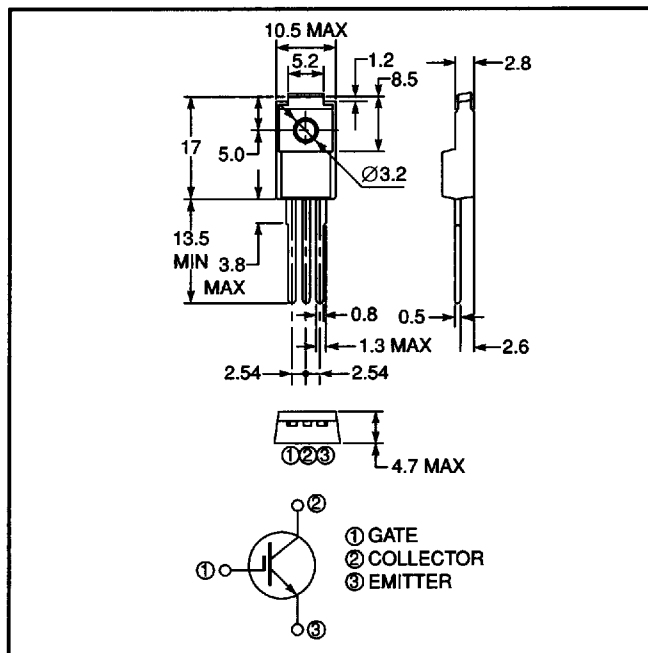
Device Outline Drawings

TO-220C



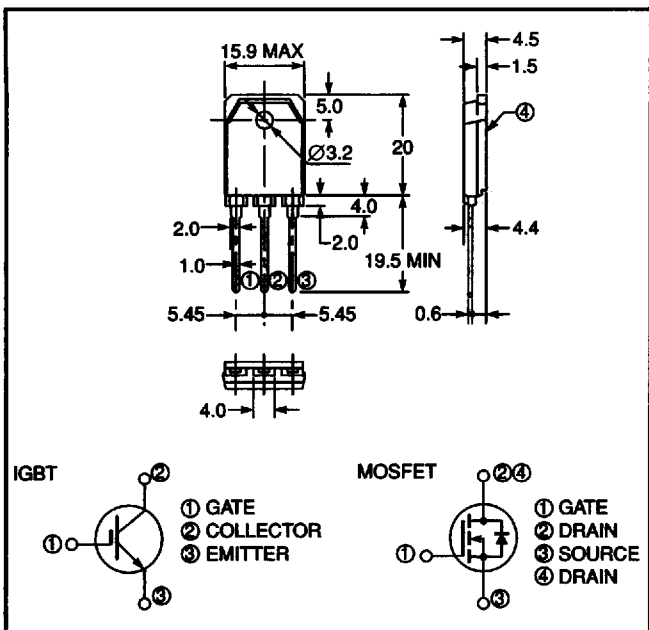
IGBT CT**VM-8

TO-220F



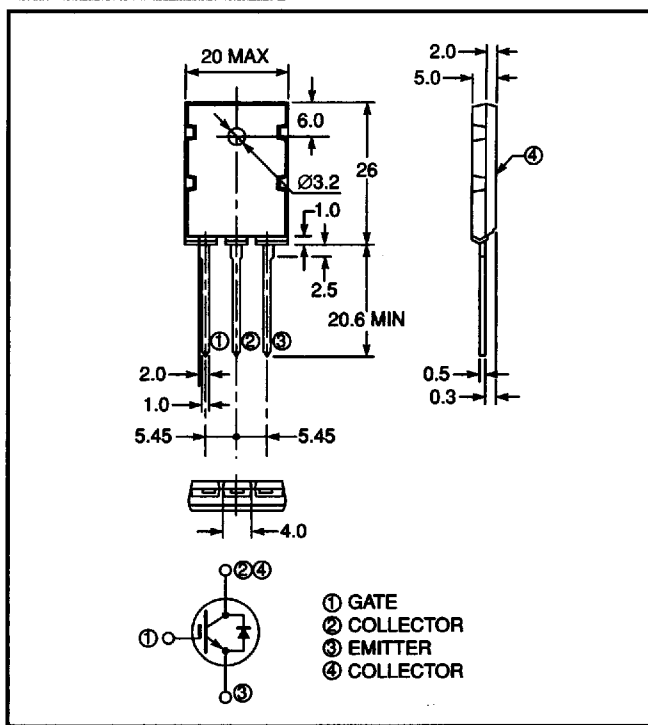
IGBT CT**TM-**

TO-3P



IGBT CT**SM-8
MOSFET FK**SM-*, FS**SM-*

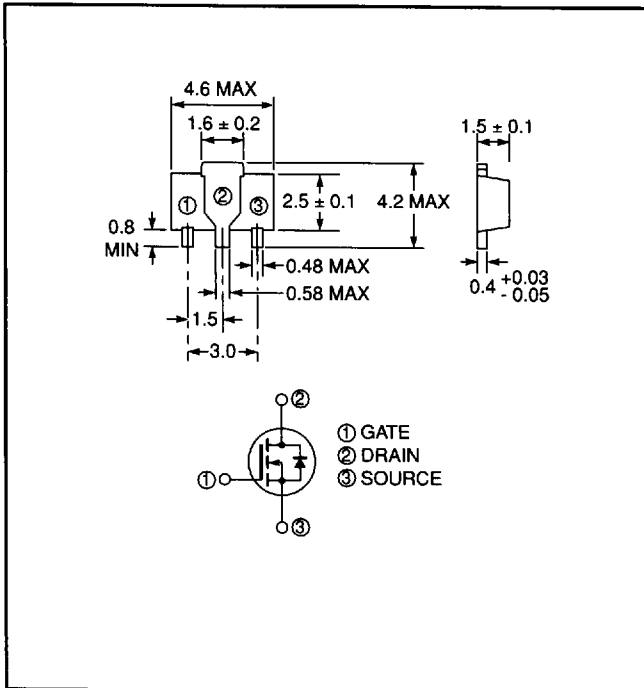
TO-3PL



IGBT CT**AM-*

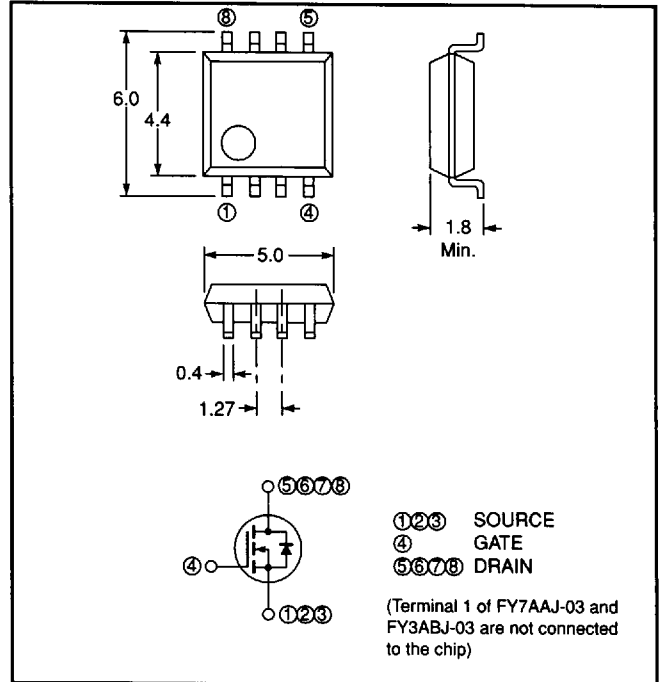
Device Outline Drawings

SOT-89



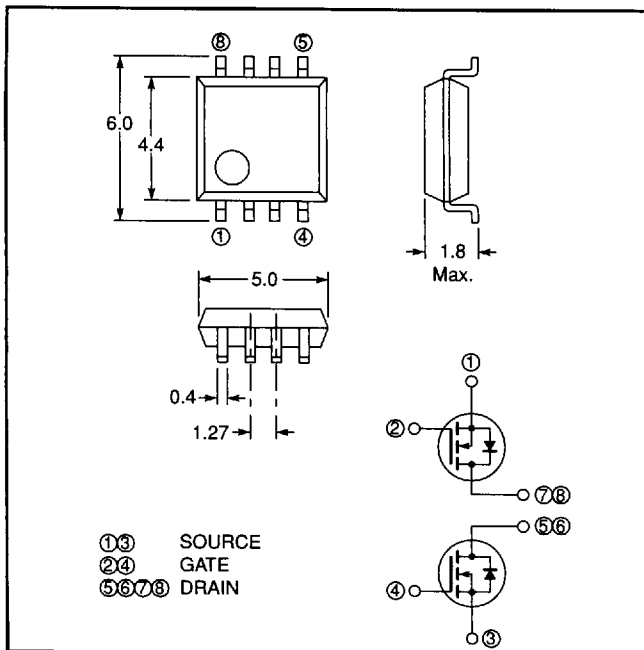
MOSFET FS**, FX**

SOP-8 (Single)



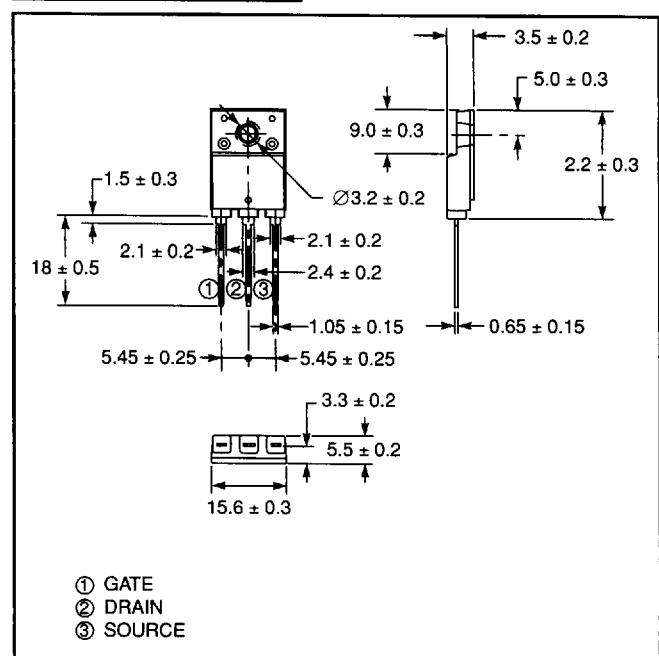
MOSFET FY**

SOP-8 (Dual)



MOSFET FY**

TO-3PF



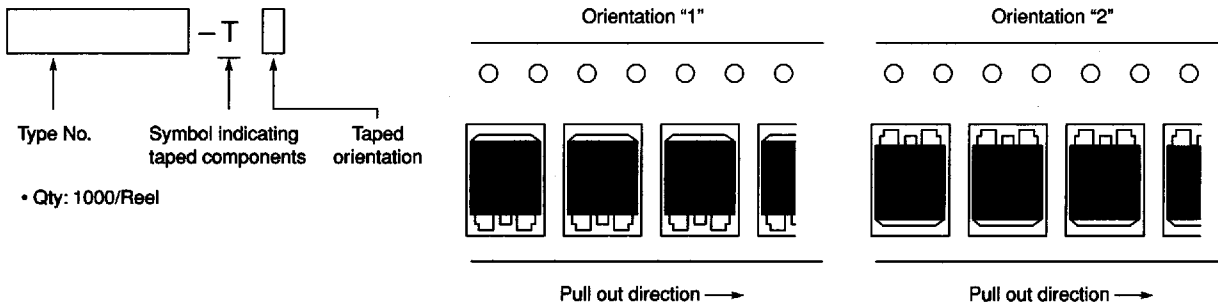
MOSFET FS**RM**

MOSFET Packing Quantities and Types

Package	Outline Code	Packing	Minimum Quantity per Package
TO-220	UM	Bag	100
TO-220FN	KM	Tube	50
TO-220S	VS	Bag	100
TO-220S	VS	Reel	1000
TO-3P	SM	Bag	20
MP-3	AS	Bag	500
MP-3	AS	Reel	3000
SOP-8	FY	Reel	3000

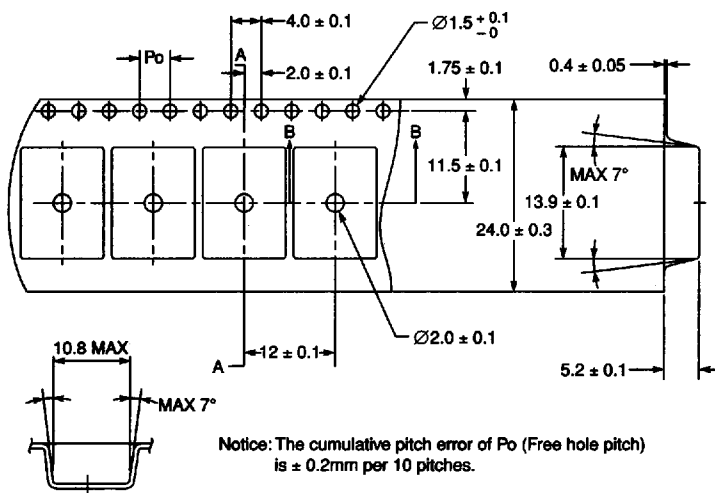
TO-220S Taping

(a) Marking

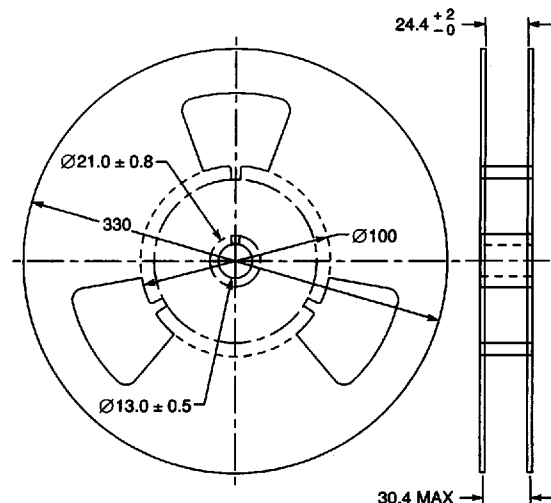


(b) Taping

• Tape Shape and Dimensions



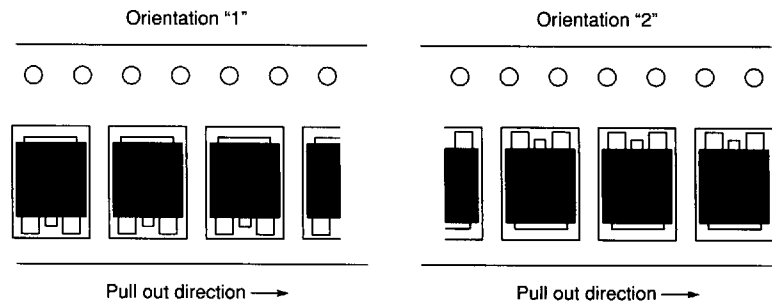
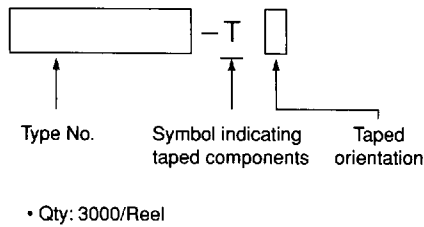
• Reel Shape and Dimensions



Packaging Information

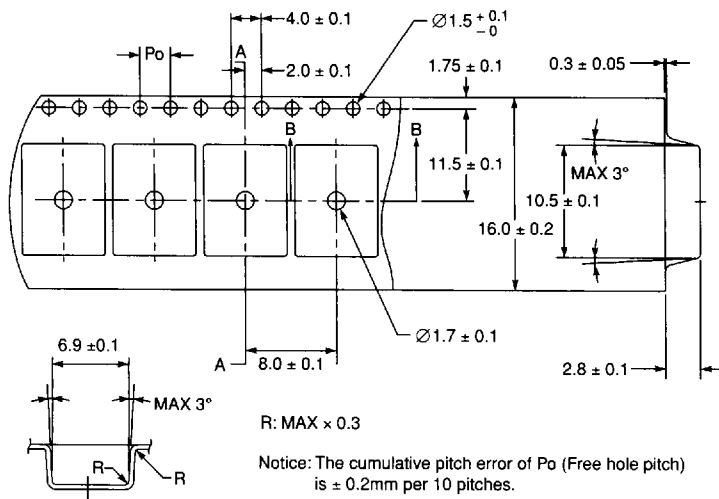
MP-3 Taping

(a) Marking

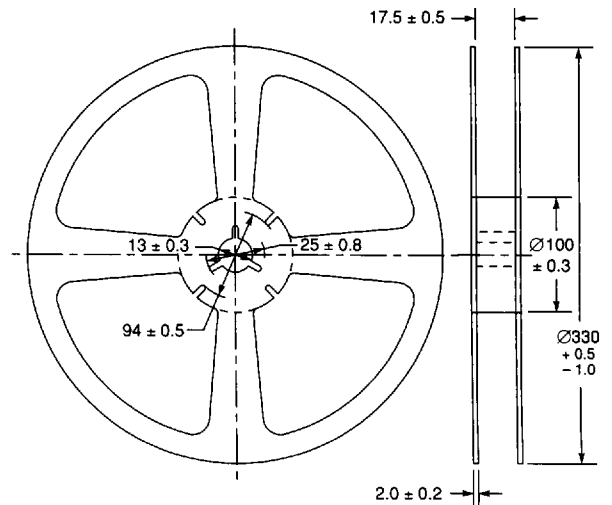


(b) Taping

• Tape Shape and Dimensions



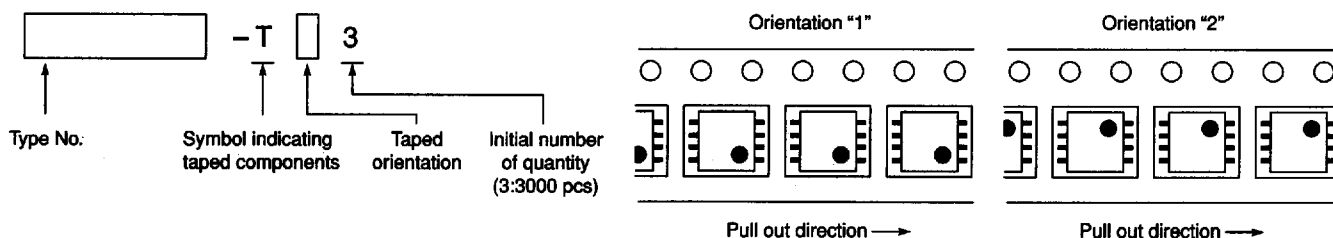
• Reel Shape and Dimensions



Packaging Information

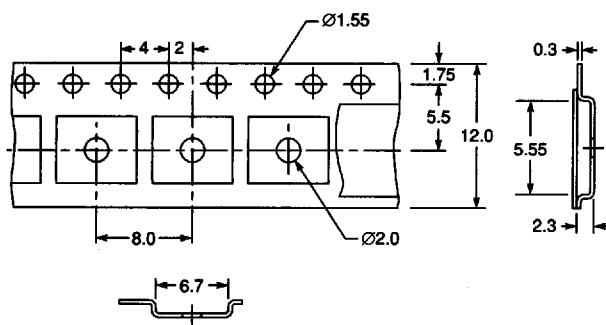
SOP-8 Taping

(a) Marking

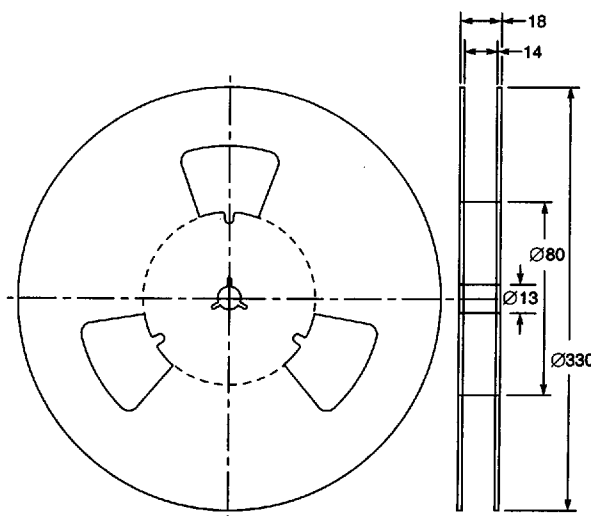


(b) Taping

- **Tape Shape and Dimensions**

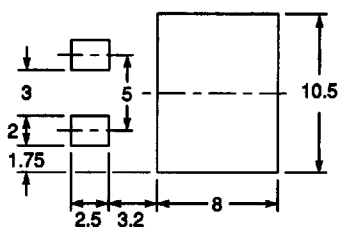


- **Reel Shape and Dimensions**

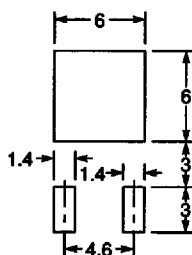


Recommended Mounting Pad

TO-220S Package



MP-3 Package



SOP-8 Package

